TETER
ARCHITECTS ENGINEERS CONNECTED

Project Manual

for

Merced City Schol District (MCSD)

John C. Fremont Elementary School, Herbert Hoover Middle School, & John Muir Elementary School

Perimeter Fencing Projects

District Bid No.: 2025-3-A

John C. Fremont Elementary School		Herbert Hoover Middle School		John Muir Elementary School	
TETER Project No.:	24-13173.01	TETER Project No.:	24-13173.02	TETER Project No.:	25-13360
DSA File No.:	24-35	DSA File No.:	24-35	DSA File No.:	24-35
DSA Appl. No.:	02-123701	DSA Appl. No.:	02-123702	DSA Appl. No.:	02-123703
PTN No.:	65771-148	PTN No.:	65771-147	PTN No.:	65771-149

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Volume 01

Contractual & Legan Requirements

for

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PTN No.:	65771-148	PTN No.:	65771-147	PTN No.:	65771-149

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TETER Project No.: 24-13173.01, DSA Appl. No.: 02-123701

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TETER Project No.: 24-13173.02, DSA Appl. No.: 02-123702

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MCSD | John Muir Elementary School – Perimeter Fencing
TETER Project No.: 25-13360, DSA Appl. No.: 02-123703

END OF SECTION

NOTICE TO BIDDERS

Notice is hereby given that the Merced City School District (hereinafter referred to as "Owner"), acting by and through its Governing Board, will receive sealed bids prior to but no later than **1:30 PM, Friday, January 9, 2026, for:**

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

as per drawings and specifications, which may now be obtained from the Architect at the following link: https://bit.ly/MCSD-2025-3-A

TETER, LLP
Attn: Chris Nikkel
chris.nikkel@teterae.com
559-437-0887

Bids will be publicly opened and read aloud at 1:30 PM on January 9th, 2026, at the Merced City School District, Facilities Services Department Operational Center (OC), 2111 Wardrobe Avenue, Merced, CA. 95341.

Before submitting bids, all bidders **must** prequalify through the Quality Bidders website. Each bid must conform and be responsive to all pertinent Bidding and Contract Documents. Complete instructions to access documents can be requested from the MCSD Department Secretary of Facilities Services, Holly Alcorn, by email at HAlcorn@mcsd.k12.ca.us. Bid documents are available for review without registration at the following plan rooms:

Central California Builders Exchange	info@cencalbx.com
Valley Builders Exchange, Inc.	info@valleybx.com
Construction Bidboard (eBidBoard)	support@ebidboard.com

Bids for this **Single Prime Project** will be received for the following base bid items: fencing demolition and removal, concrete and asphalt demolition and removal, concrete flatwork, paving, fencing, and landscape/irrigation. The Notice of Intent to Award is anticipated by January 19, 2026. CONTRACTOR should consult the agreement form regarding contract time, milestones and Liquidated Damages.

Non-Mandatory Pre-Bid Meeting:

Contractors who plan to submit bids have the option to attend the ONE (1) non-mandatory Virtual Pre-Bid Meeting on Friday, December 19, 2025, at 9:00 AM.

The Microsoft Teams Meeting can be accessed by using the following information;
link: https://bit.ly/MCSD-2025-3-A-Meet,
Meeting ID: 223 649 930 662 22,
Access Code: H7MB6ok9.

Bids must be accompanied by a bidder's bond, cashier's check, or certified check for at least ten percent (10%) of the amount of the base bid and made payable to the Owner, as detailed in the Contract Documents, as well as the following documents: Bid Form, Bid Bond Security, List of Designated Subcontractors, Non-Collusion Declaration, Iran Contracting Act Certification, and Fingerprinting Notice & Acknowledgement as outlined in the "Instruction to Bidders".

Pursuant to the Contract Documents, the successful bidder will be required to furnish a Payment (Labor and Material) Bond in the amount of one hundred percent (100%) of the Contract Sum, and a Faithful Performance Bond in the amount of one hundred percent (100%) of the Contract Sum.

Engineer's Estimate: $1,870,000 total (inclusive of all three sites).

Project Bidding Schedule:

First Publication:	Thursday, December 11, 2025
Second Publication:	Thursday, December 18, 2025
Virtual Pre-Bid Meeting:	Friday, December 19, 2025 @ 9:00 AM
Bid Date:	Friday, January 9, 2026 @ 1:30 PM

Merced City School District
Bryan Behn, Director of Facilities BBehn@mcsd.k12.ca.us
Cell: 209-631-7389 Office: 209-385-6332

INSTRUCTIONS TO BIDDERS

SECURING DOCUMENTS:

Drawings and Specifications are available at:

TETER, LLP
ATTN:
Chris Nikkel
chris.nikkel@teterae.com
7535 N Palm Ave, STE 201
Fresno, CA 93711
559-437-0887

Bid documents are available for review without registration at the following plan rooms:

Central California Builders Exchange	info@cencalbx.com
Valley Builders Exchange, Inc.	info@valleybx.com
Construction Bidboard (eBidBoard)	support@ebidboard.com

BID FORMAT:

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

PREQUALIFICATION:

This Project is subject to prequalification. Prequalification Applications must be submitted through Quality Bidders and can be accessed on the Merced City School District webpage at: https://www.mcsd.k12.ca.us/District/Department/1-Facilities/Portal/upcoming-projects-and-contractor-information

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 sub-bid 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 (½) 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 (½) 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 (½) 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 (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 X 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 is 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 shall be awarded to the lowest responsible and responsive bidder as interpreted by the Owner under California law based upon the total Base Bid amount, 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:

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

SUBSTITUTION OF MATERIALS:

The Contractor must ensure that the proposed substitutions by the Contractor or its subcontractors are submitted to the 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 **ONE HUNDRED TWENTY (120)** calendar days from (a) the date of commencement of the Work as established in the Owner's Notice to Proceed, or (b) if no other date is established in a Notice to Proceed from Owner, the date of Contractor's actual commencement of the Work (including mobilization).

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, 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 **$500.00 per calendar day** for each and every day's delay beyond the time specified 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 date; 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 FORM

Merced, California

Merced City School District
Facilities Department
2105 Wardrobe Avenue
Merced, CA 95341

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:

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

prepared by:

TETER, LLP
7535 N Palm Ave, STE 201
Fresno, CA 93711
(559) 437-0887

Base Bid:

_____ Dollars

($_____)

Bidder acknowledges and agrees that the Base Bid accounts for all items in contract documents.

For informational purposes, Bidder shall provide the following Sub-Totals for use by the District. In the event that the tabulated total of the following sub-totals does not match the Base Bid stipulated above, the Base Bid stipulated above shall govern and be the basis of evaluation for the Award of the Contract.

Sub-Total No. 1:
Sub-Total for work at John C Fremont ES ($_____)

Sub-Total No. 2:
Sub-Total for work at Herbert Hoover MS ($_____)

Sub-Total No. 3:
Sub-Total for work at John Muir ES ($_____)

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 _____

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 & Fax Number: _____

DIR Registration Number & Classification: _____

Email Address: _____

California Contractor License No.: _____

Class and Expiration Date: _____

State of Incorporation, if Applicable: _____

( ) Evidence of authority to bind corporation is attached.

Dated: _____, _____

Signed: _____

BID BOND

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

KNOW ALL MEN BY THESE PRESENTS that we the undersigned _____ as Principal and _____ as Surety, are hereby held and firmly bound unto the Merced City 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 the Work in strict accordance with Contract Documents:

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

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 _____, 2025, 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).

DESIGNATION OF SUBCONTRACTORS

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

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.*

Portion of Work	Name of Subcontractor & Phone No.	Location of Subcontractor	CA Contractor License Number and License Class	DIR # & Classification	Email Address

Portion of Work	Name of Subcontractor & Phone No.	Location of Subcontractor	California Contractor License Number	DIR # & Classification	Email Address

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 _____, 2025, at _____[city], CA.

Signature: _____

Print Name: _____

Title: _____

NONCOLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

Owner: _____

Project: Perimeter Fencing Projects for John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

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 _____, 2025, at _____ [*city*], CA.

_____
Signature

_____
Print Name

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code sections 2202-2208)

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

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

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.

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

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.

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.)

DRUG-FREE WORKPLACE CERTIFICATION

This Drug-Free Workplace Certification is required pursuant to Government Code Sections 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 services 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 awarded by a State agency may be subject to suspension of payments or termination of the contract, or both, and the contractor may be subject to debarment from future contracting if the state agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract or grant from a State agency 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 by subdivision (a) 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 or grant 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 Owner 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 or grant awarded herein is subject to suspension of payments, termination, 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.

_____
Name of Contractor

_____
Signature

_____ _____
Print Name Date

NOTICE AND CERTIFICATION REGARDING RUSSIA-RELATED SANCTIONS

(Executive Order N-6-22)

District:
Project:
Contract:
Contract Date:
Company (Name): _____

NOTICE:

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

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

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

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

CERTIFICATION:

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

(i) I am a duly authorized representative of the Company identified above in this form and, in that capacity, I have executed this certification on behalf of the Company.

(ii) The Company acknowledges that, in connection with various programs, services, and activities undertaken by the District from time to time, the District receives grant funding provided through one or more State agencies or departments.

(iii) The Company represents and warrants that neither the Company nor any of its directors, officers, or affiliates: (i) invests in, or has financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia ("Russian Entities"); or (ii) transfers technology to Russia or any Russian Entities.

(iv) The Company represents and agrees that, in connection with the Contract identified above in this form, and in connection with their activities pursuant to such Contract, neither the Company nor any of its directors, officers, or affiliates shall engage in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violate any of the Economic Sanctions.

(v) The Company acknowledges and agrees that, while the Contract is in effect, if the Company or any of its directors, officers, or affiliates engages in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violates any of the Economic Sanctions, then, following notice and 30-day opportunity for the Company to submit a written response, and in the District's sole discretion or as may be required by the State, the District may terminate the Contract and, in addition, the District and/or State may take any and all other actions as permitted by applicable law.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that we, _____ _____ as Principal and _____ as Surety, are held and firmly bound unto **Merced City School District**, in the County of Merced, State of California, hereinafter called the "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 _____, 2025, for construction of:

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

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 _____, _____ 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.

PAYMENT BOND
(Labor and Material)

KNOW ALL MEN BY THESE PRESENTS:

That WHEREAS, Merced City 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:

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

Which said agreement dated _____, 2025, 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 _____, _____.

(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 _____.

GENERAL CONDITIONS

for

CONTRACT OF CONSTRUCTION

OF THE

Perimeter Fencing Projects for
John C. Fremont Elementary, Herbert Hoover Middle School, and John Muir Elementary
Bid # 2025-3-A

MERCED CITY SCHOOL DISTRICT

October 2025

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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 and submission of documents. 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, but "Project" may also 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

Statutory definitions of "Completion" and "Complete" shall apply for those statutory purposes. For all other purposes, including accrual of liquidated damages, Claims, and warranties, "Completion" and "Complete" mean the point in the Work 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 shall not constitute "Completion" or "Complete."

1.1.10 *COMPLETION* OF THE PROJECT

For purposes of accrual of liquidated damages for delay to the Project, *completion* shall mean the point in the Project where (1) all contractors and Owner have fully and correctly performed all work of the entire Project in all parts and requirements, including corrective and punch list work, and (2) Owner's representatives have conducted a final inspection of the entire Project that confirmed this performance. Substantial, or any other form of partial or non-compliant, performance shall not constitute *completion* or *complete*.

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 Work. 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 and 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 the 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 Contract. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other contracts or projects or for additions to this Contract or 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 Work, 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 Work and 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 Work 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 Section 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.

Owner shall schedule and coordinate the activities of Contractor with the other contractors and Owner. Contractor agrees to accept the Owner's construction schedules, schedule updates, overall sequence and coordination of construction for the Project.

Contractor realizes that work by other contractors or Owner may occur simultaneously with Contractor's Work in any given area. Contractor is responsible for its own sequences that may occur within a given activity or set of activities. Contractor shall not commit or permit any act which will adversely affect the work of any other contractor or Owner. Contractor shall provide layout of its Work at the request of any other contractor or Owner.

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 OTHER'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

During its Work, 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 Work and Project, and the future progress of the Work and the Project. 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, 12.2.5, and 12.2.6), 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 any 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, and shall bear the attributable cost of correction and delays to the Work, other contractors' work, and the Project.

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 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 baseline construction schedule for the Work, which shall conform to the Contract Documents' requirements.

Contractor shall submit a monthly updated schedule of the Work 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 (a) critical path scheduling and (b) facilitation of 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 Work, 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 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 Work schedule or a contractual milestone, or to Complete the Work within the Contract Time as adjusted by change orders, or if the Contractor's actual progress falls behind the Work schedule or it is apparent to Owner that Contractor will not meet contractual milestones or Complete the Work within the Contract Time 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 within the Contract Time 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 _____ Contract ("Contract"). _____ *[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 the Work for this Contract.
>
> 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 schedules, only contains truthful and accurate as-built and as-planned dates of the Work (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.

_____ *[signature]*
_____ *[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 Owner, or 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 ninety (90) 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 Contract and Contractor's name and dated, and each lot submitted must be accompanied by a letter of transmittal referring to the name of the Contract and Contractor and to the Specification section number for identification of each item clearly stating in narrative form, as well 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 sepia and five (5) legible prints 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 Contract, 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, shall, 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 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 to the Owner 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 approval, or the approval of any other governmental agency having jurisdiction, 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 a separate contractor 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. 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 of 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, any 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 section 4.5, below, 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 or as the basis for a time extension, regardless of the merits of the defense or time extension. 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 management of the Work and Project and the mitigation of costs and delays to the Work and Project.

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 same 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 for 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. If Contractor intends to rely on Owner's acts or omissions in support of a request for a time extension, then Contractor must also provide the notice set forth in section 3.18, above.

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 Work and Project management and the mitigation of Work and 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 believes 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 sent by registered or certified mail, return receipt requested, for (a) a time extension, including, without limitation, a request for relief from damages or penalties for delay assessed by Owner under the Contract Documents; (b) payment by Owner of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract Documents, and 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) within thirty (30) days of the Owner's rejection of a COR in whole or in part, or of a COR being deemed rejected, pursuant to Section 4.5.2 above; but if a Claim has not been submitted as of the date that the Contractor Completes the Work and submittal of the Claim was not yet required under the Contract Documents, then the Claim shall be submitted within seven (7) days of Completion of the Work, and such Claim shall not be barred due to lack of a Notice of Potential Change or COR if the deadline for the Notice of Potential Change or COR was after Completion of the Work.

In addition, within seven (7) days of Completion of the Work, Contractor shall submit to Owner, in writing, a list and summary of all Claims for money or time extensions under or arising out of this Contract which were timely filed, which were fully compliant with the Contract's requirements for Claims, and which the Contractor wishes to pursue in whole or in part. This Claim summary requirement shall not extend the time for submitting a Claim.

Failure to timely submit a Claim or Claim summary, failure to specifically identify a Claim in the Claim summary, or failure to comply with any of the requirements in the Contract for a Claim, 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 responsibility to substantiate Claims shall rest with the Contractor, and the Contractor shall furnish reasonable documentation to support each Claim, including as applicable, that documentation set forth in sections 4.5.5.2 through 4.5.5.4. 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 ____ *[public entity name]* for the _____ Contract ("Contract").

_____ *[Contractor company name]* authorized me to prepare the attached Claim for money and/or time extension for _____ *[public entity name]* regarding this Contract (such Claim being dated _____, 20__, and 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, 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 _____ *[public entity name]* 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 _____, 20__, at _____, California.

_____ *[signature]*
_____ *[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 4.5.6.3) 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 the date of Completion (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 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, and Public Contract Code section 9204(d)(5). 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.

In addition to the other requirements in the Contract Documents, including but not limited to this Section 4.5, 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 (PUBLIC CONTRACT CODE SECTION 9204)

Claims are subject to this section 4.5.6 and Public Contract Code section 9204, as well as the separate procedures and substantive provisions of Sections 4.5.1 through 4.5.5 and the rest of the Contract Documents. Claims of $375,000 or less must also comply with Public Contract Code sections 20104 et seq., but to the extent that one of the procedures in Sections 20104 et seq. conflicts with the procedures in Section 9204, the requirements of Section 9204 shall control.

4.5.6.1 ***Claims***

The Owner shall conduct a reasonable review of the Claim and shall respond in writing to any written Claim within 45 days of receipt of the Claim. During that 45-day period, plus any extension, Owner may request, in writing, additional documentation supporting the Claim or relating to defenses to the Claim the Owner may have against the Contractor. Owner shall review any additional documentation Contractor supplies in response to that request within the 45 day, plus any extension, timeline.

After receipt of a Claim, the 45-day period may be extended by Owner and Contractor. The written response shall identify which portion of the Claim is disputed and what portion is undisputed. If Owner needs approval from its governing board to provide the written response, and the governing board does not meet within the 45 days or any extended period of time, then

the Owner shall have up to three days after the next publicly noticed meeting of the governing board to provide the written response. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after the Owner issues the written response. Owner's failure to respond to a Claim within the above time periods or to otherwise meet the above time requirements shall result in the Claim being deemed rejected in its entirety.

4.5.6.2 ***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 written demand sent by registered or certified mail return receipt requested, 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.

Within ten (10) business days after the conclusion of the meet and confer conference, the Owner shall give a written statement to the Contractor identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after the Owner issues the written statement. Within ten (10) business days of issuance of Owner's written statement, Contractor shall identify in writing the disputed portion of the Claim that shall be submitted to non-binding mediation (which may consist of any nonbinding process, including but not limited to neutral evaluation or a dispute review board), with the Owner and Contractor sharing the costs equally. The Owner and Contractor shall mutually agree to a mediator within ten (10) business days after the Contractor has identified in writing the disputed portion of the Claim. If they cannot agree upon a mediator, then each shall select a mediator and those two mediators shall select a qualified neutral third party to mediate the disputed portion of the Claim. (Each party shall bear the fees and costs its respective mediator charged in connection with the selection of the neutral mediator). The parties may mutually waive in writing the requirement for mediation. 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. Owner's failure to respond to the Claim within the above time periods or to otherwise meet the above time requirements shall result in the Claim being deemed rejected in its entirety.

4.5.6.3 *Government Code Claim*

If the Claim or any portion remains in dispute after the mediation 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 4.5.6.2. 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 4.5.6.2, including any period of time utilized by the meet and confer process.

4.5.7 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.

4.5.8 CLAIMS FOR CONCEALED OR UNKNOWN CONDITIONS

4.5.8.1 *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).

4.5.8.2 *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:

4.5.8.2.1 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.

4.5.8.2.2 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.

4.5.8.2.3 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 deadline for Completion provided 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.

4.5.9 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 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 a Milestone Deadline or the Completion of the Work.

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 Work 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 Project work related to the Contract with the Owner's own forces, or to award separate contracts in connection with such other work 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 such 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 of those contracts shall mean the contractor who executes each separate Owner/Contractor agreement.

6.1.3 CONTRACTOR DUTIES

Although the Owner 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, Contractor shall cooperate with Owner. 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 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 contractors 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 cause damage to the work or property of any other contractor on the Project, or to the Project or the property of a third party, or cause any delay to any such contractor or third party, the Contractor shall defend, indemnify and hold Owner harmless for such damage or delay under Section 3.16, above. Owner may withhold from progress payments and/or retention for the cost of such damage or delay.

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, 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 Work'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 a Milestone Deadline or Contract Time is requested, a COR shall also include delay analysis to validate any proposed change, 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 Work 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.

	EXTRA	CREDIT
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-five percent (25%) 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.

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 perform 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 Milestone Deadlines and Contract Time are reasonable periods 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, shall achieve all Milestone Deadlines, 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)

The Contractor shall be granted a reasonable time extension for excusable delays, which are those delays that meet each and every of the following conditions:

(a) The delay was beyond the control of Contractor and its subcontractors and material suppliers;

(b) The delay was caused by events about which Contractor was not advised at or before the time of bidding;

(c) The delay impacted and delayed (i) the controlling items of Work (i.e., the as-built critical path, as determined from the as-planned schedule and the actual progress of the Work), or (ii) the achievement of a Milestone Deadline, or the Completion of the whole Work within the Contract Time;

(d) The delay was not caused by Contractor or its subcontractors or suppliers, including but not limited to their breaches of contract or the standard of care;

(e) The delay was not associated with loss of time resulting from the necessity of submittals to Owner for approval, or from necessary Owner surveys, measurements, inspections and testing;

(f) The delay was not caused by usual or common weather for the time of year, including usual or common severe weather; and

(g) The delay could not have been be prevented by the exercise of care, prudence, foresight, and diligence by Contractor.

Excusable delays may include acts of God, acts of public enemy, 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 and uncommonly severe weather for the time of year, unforeseen site conditions, or delays of subcontractors due to such causes. 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 Owner 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 Work within the Contract Time and in the manner provided for by the Contract Documents, or failure to complete any specified portion of the Work by a milestone deadline, shall subject the Contractor to liquidated damages as described in Article III of the Agreement and the Contract Documents. 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 as a result of each calendar day by which Completion of the Work is delayed beyond the Contract Time as adjusted by Change Orders.

In addition, delaying another contractor's work on the Project or causing delay to the *completion* of the Project shall subject the Contractor to liquidated damages as described in Article III of the Agreement and the Contract Documents. 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 as a result of each calendar day by which Contractor delays the work of others on the Project or *completion* of the Project itself.

If liquidated damages accrue as described above, the Owner, in addition to all other remedies provided by law, shall have the right to assess and withhold as provided in Article III of the Agreement and the Contract Documents.

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 withheld

stop payment notice funds 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 within the Contract Time;

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 deadlines;

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, including credits for any unspent contingency fund or allowances;

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 Contract 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 uncomplied 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 Punch List shall include all outstanding obligations of Contractor, including training, start-up, testing, and submission to Owner of all required documentation (e.g., written guarantees, warranties, invoices, as-built drawings, manuals, bonds, and the documents described in Sections 9.3 and 9.9). 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 not complete or correct. 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 (see Sections 3.5, 12.2.5, and 12.2.6).

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 on the Project 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 the earlier of formal acceptance of the Work or Completion 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 such material was generated by the Contractor, another 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 delay or additional costs incurred in accordance with the applicable provisions of Articles 7 and 8 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, Owner 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 form 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 Work 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 and the Architect 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 Sections 3.5 and 9.7.1, 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 Sections 3.5, 9.7.1, and 12.2.5 relates only to the specific warranty obligation of the Contractor to correct the Work after the date of commencement of warranties, 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 pay any additional shipping or transportation costs or expenses (mileage and hours). If Owner pays such additional costs or expenses instead of Contractor, then 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 the Work 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 Civil 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 work by the Contractor or subcontractor.

13.8.6 MINIMUM WAGE RATES

Any worker employed to perform Work, 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 includes 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 minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned 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 Owner and the Division of Labor Standards Enforcement of the Department of Industrial Relations ("DIR") and as may be required by the Labor Commissioner under Labor Code section 1771.4. 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, 2015, 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 shall 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 the approval of 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 land surveyor classification shall not be less than one (1) apprentice for each five (5) 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 employed, except for the land surveyor classification. 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) or twenty (20) working days. 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 this section.

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 the Contract is awarded or any Subcontractor under him or her, who, in performing any of the work under the Contract, employs journeymen or apprentices in any apprenticeable craft or trade and who is not contributing to a fund or funds to administer and conduct the apprenticeship program in any such craft or trade in the area of the Site of the Project, to which fund or funds other contractors in the area of the Site of the Project are contributing, shall contribute to the fund or funds in each craft or trade in which he or she employs journeymen or apprentices on the Project in the same amount or upon the same basis

and in the same manner as the other contractors do, but where the trust fund administrators are unable to accept the funds, contractors not signatory to the trust agreement shall pay a like amount to the California Apprenticeship Council. The Contractor or Subcontractor 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 Contractor.

13.10.8 DECISIONS OF JOINT APPRENTICESHIP COMMITTEE

All decisions of the joint apprenticeship committee under this section13.10 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 sections 1777.1 and 1777.7, in the event a Contractor or Subcontractor fails to comply with the provisions of this section 13.10 and Labor Code section 1777.5, penalties shall apply, including 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. 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 (WQ Order No. 920-08-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 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 to meet a Milestone Deadline or to Complete 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 Work.

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.

SECTION 011100
SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification:

MCSD Bis #: 2025-3-A

Site 1:	Site 2:	Site 3:
John C Fremont Elementary School 2150 S St. Merced, CA	Herbert Hoover Middle School 800 E 26th St. Merced, CA	John Muir Elementary School 300 w. 26th St. Merced, CA
Architect's #: 24-13173.01	Architect's #: 24-13173.02	Architect's #: 25-13360
DSA Appl. #: 02-123701 PTN #: 65771-148 DSA File #: 24-35	DSA Appl. #: 02-123702 PTN #: 65771-147 DSA File #: 24-35	DSA Appl. #: 02-123703 PTN #: 65771-149 DSA File #: 24-35

B. Owner:

Merced City School District
444 West 23rd Street
Merced, CA

Telephone: (209) 385-6343
Contact: Bryan Behn

C. Architect:

TETER, Inc.
7535 North Palm Avenue, Suite 201
Fresno, California 93711

Telephone (559) 437-0887
Contact: Chris Nikkel

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. John C. Fremont Elementary School

   a. Removal of existing chain link fencing and gates,
   b. Installation of new decorative metal fencing and gates, and concrete mow strips

2. Herbert Hoover Middle School

   a. Removal of existing chain link fencing and gates,
   b. Installation of new decorative metal and chain link fencing and gates, and concrete mow strips
   c. Painting of existing decorative metal fence and gates

3. John Muir Elementary School

   a. Removal of existing chain link fencing and gates,
   b. Installation of new decorative metal fencing and gates, and concrete mow strips
   c. Painting of existing decorative metal fence and gates

B. Type of Contract: Project will be constructed under a single prime contract.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limits on Use of Site: Limit use of Project site to the Project area indicated and site areas allowed for Contractor’s use. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.6 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify the Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

1. Submit a written request to the Architect for work hours outside of the indicted on-site hours; request subject to review by the Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than 2 days in advance of proposed utility interruptions.
2. Obtain Architect’s and Owner’s written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect and Owner not less than 2 days in advance of proposed disruptive operations.
2. Obtain Architect’s and Owner’s written permission before proceeding with disruptive operations.

E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Project site is not permitted.

F. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

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

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements shall be complied with by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

1. Where conflicts occur between Division 00 Contracting Requirements and Division 01 General Requirements, the most restrictive requirements shall apply; Architect shall make the final decision on which requirement(s) apply.

D. Drawing and Specification Coordination:

1. Requirements for materials and products identified on Drawings are described in detail in the Specifications unless materials and products are described in detail on the Drawings.

2. Generic terms are used to identify materials and products on the Drawings.

3. Specifications establish minimum quality standards for products, materials, and installation requirements unless more stringent requirements are indicated on the Drawings; Drawings establish material and product location and quantity.
4. Where requirements for materials and products indicated on the Drawings are not specified, provide heavy duty commercial grade products and materials.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 011103
ADDENDA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative requirements for Addenda issued prior to bid opening.

B. Related Requirements:

1. Division 00 Sections as applicable to contract requirements and modifications.
2. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
3. Division 01 Section "Contract Modification Procedures" for changes to the Contract Documents after award of the Contract.

1.3 NOTICE TO BIDDERS

A. Addenda will be issued to registered plan holders for changes to the drawings and specifications during the bidding period prior to the bid opening. Addenda shall serve to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addenda affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

1.4 GOVERNING AGENCY REVIEW AND APPROVAL

A. Addenda shall be submitted to the Authority having Jurisdiction (AHJ) by the project Architect and shall be approved by the AHJ in order to be officially incorporated into the construction documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 011105
USE OF ARCHITECT'S ELECTRONIC FILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes Administrative and procedural requirements for use of Architect's electronic Contract Document drawing files.

B. Related Sections:

1. Division 01 Section "Project Management and Coordination."
2. Division 01 Section "Submittal Procedures."
3. Division 01 Section "Project Record Drawings."

1.3 USE OF ARCHITECT'S ELECTRONIC FILES

A. Architect may make available to Contractor digital data files of Architect's Drawings for use in preparing shop drawings, coordination drawings, and project record drawings.

1. Electronic files will be available without charge.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
3. Files will be supplied digitally via email or FTP site and will be in PDF, DWG, or similar common format.
4. Waiver of Liability: Contractor, Subcontractors, and Suppliers of this Project shall each execute a waiver of liability for each use of the Architects electronic files.

   a. Waiver of Liability form shall be submitted to the Architect at the time or request for use of Architect's electronic data files.
   b. Waiver of Liability form shall be the "ELECTRONIC DATA FILE DISTRIBUTION WAIVER OF LIABILITY FORM" included at the end of this Specification Section.
   c. The use of the electronic files shall only be used for this Project and for the identified purposes noted in the Waiver of Liability form.

      1) Each entity shall be responsible for complying with the restrictions of the Liability Waiver form.
      2) Electronic Contract Document drawing files received from the architect shall not be duplicated without written permission of the Architect.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

(Electronic Data File Distribution Waiver of Liability included on the following page)

TETER
ARCHITECTS ENGINEERS CONNECTED

ELECTRONIC DATA FILE DISTRIBUTION WAIVER OF LIABILITY

TETER
7535 North Palm, Suite 201
Fresno, California 93711

Project: **RFP 2025-## MCSD Fencing Projects**

Intended Use: _____

Requested Documents: _____

_____

Any electronic data, files or information provided under this Agreement are the property of the above listed Professionals and consultants (Team). It is understood and agreed that the information contained in these electronic data file shall not be copied or duplicated for any use other than the project for which they were created. It is understood by the undersigned that compatibility of this electronic media with other systems is not guaranteed, and conversion to other systems is done at the user's own risk.

The user hereby agrees and recognizes that designs, plans and data stored on electronic media including, but not limited to, computer disk and magnetic tape, may be subject to undetectable alteration and/or uncontrollable deterioration. It is agreed by the undersigned that the Team shall not be liable for the completeness or accuracy of any material provided on electronic media.

The undersigned agrees to defend, hold harmless and indemnify the Team and its officers, directors, employees, agents and consultants for any and all claims, losses, costs or damage whatsoever arising out of, resulting from, or in any way related to the use of electronic data files provided hereunder, whether that use is authorized or unauthorized. The user further agrees to defend, indemnify and hold harmless the Team its officers, directors, employees, agents and consultants from any and all claims, damages, losses, expenses and injuries arising out of the modification of the electronic data files by the user or by anyone obtaining said files through or from the user.

The Team bears no responsibility for the information in the electronic data files once it leaves the offices of **TETER**. The undersigned understands that the electronic data files are subject to applicable copyright laws of the United States and agrees to be bound by same. Upon our receipt of this agreement duly executed by an Officer of your firm you may request the Data files.

Name (Print/Sign): _____ Date: _____
Firm: _____ _____
Phone and email: _____ _____

Name (Print/Sign): _____ Date: _____
Firm: _____ _____
Phone and email: _____ _____

Name (Print/Sign): _____ Date: _____
Firm: _____ _____
Phone and email: _____ _____

SECTION 012300
ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule of Alternates: A schedule of alternates is included in Part 3 Article “Schedule of Alternates” at the end of this Section.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. No Alterates included at this time.

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Sections:

1. Division 00 Section “Instructions to Bidders” and other Division 00 Sections as applicable to substitution requests prior to submission of bids.
2. Division 01 Section “DSA Hourly Fee Services” for DSA hourly fee services for review of changes to DSA approved Construction Documents.
3. Division 01 Section “Contract Modification Procedures” for changes to DSA approved Construction Documents.”
4. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
5. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor that are not required in order to meet other Project requirements but may offer advantage to the Owner.

REGULATORY REQUIREMENTS

A. Division of the State Architect (DSA) Review and Approval: Substitutions resulting in changes to DSA approved Construction Documents may be considered a change requiring DSA review and approval and submission of a DSA Construction Change Document (CCD) form by the Architect.

1. DSA Construction Change Documents shall be as specified in Division 01 Section “Contract Modification Procedures.”
2. DSA Hourly Fee Services for review of CCD’s shall be as specified in Division 01 Section “DSA Hourly Fee Services.”

1.5 SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title, and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at the end of this Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later. Architect will not act on any Post-Bid Substitutions until 7 days following the submission of the Schedule of Values per Division 01 Section “Payment Procedures.”

a. Forms of Acceptance:

1) Substitutions Prior to Bid: Addenda will be issued for substitutions accepted prior to bid.
2) Substitutions After Award of Contract: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.

b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.6 QUALITY ASSURANCE

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

1.7 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.8 SUBSTITUTIONS

A. Substitutions Prior to Bid: Architect will consider requests for substitution if received within 21 days prior to the submission of bids. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider bidder’s request for substitution when the following conditions are satisfied.

a. Substitutions prior to bid shall also be subject to the requirements of applicable Division 00 Specification Sections.
b. Substitutions prior to bid shall comply with the requirements for Substitutions for Cause or Substitutions for Convenience as applicable.

2. Substitutions requested by bidders during the bidding period, and accepted by Addendum prior to award of the Contract, are considered as included in the Contract Documents.

B. Substitutions After Award of Contract: The Contractor after award of the Contract, as allowed by the General Conditions, may submit materials and methods to be considered for substitutions.

1. The following are not considered to be substitutions:

a. Revisions to the Contract Documents requested by the Owner or Architect.
b. Specified options of products and construction methods included in the Contract Documents.
c. The Contractor’s compliance with governing regulations and orders issued by governing authorities.

C. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 21 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

D. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

    a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    b. Requested substitution does not require extensive revisions to the Contract Documents.
    c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    d. Substitution request is fully documented and properly submitted.
    e. Requested substitution will not adversely affect Contractor's construction schedule.
    f. Requested substitution has received necessary approvals of authorities having jurisdiction.
    g. Requested substitution is compatible with other portions of the Work.
    h. Requested substitution has been coordinated with other portions of the Work.
    i. Requested substitution provides specified warranty.
    j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

(Substitution Request Form included on the following page)

Substitution Request Form

Corporate Headquarters
7535 N. Palm Ave. #201
Fresno, CA 93711

559.437.0887 T
559.438.7554 F
teterae.com

FOR: Hoover I.S. Fencing

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

SECTION	PARAGRAPH	SPECIFIED ITEM
_____	_____	_____

Proposed Substitution: _____

Attach complete technical data, including laboratory tests, if applicable.

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

Fill in the blanks below:

A. Does the substitution affect dimension on Drawings:

_____

B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?

_____

C. What affect does substitution have on other trades?

_____

D. Difference between proposed substitution and specified item?

_____

E. Manufacturer's guarantees of the proposed and specified items are:

_____ Same _____ Different (explain on attachment)

F. Cost difference between proposed substitution and specified item - savings to Owner?

_____

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item and will be at no additional cost to the Owner.

Submitted to the Architect by:

Signature: _____

Firm: _____

Address: _____

_____

Date: _____

Telephone: _____

For Use by Design Consultant

Accepted _____
Accepted as Noted _____
Not Accepted _____
Received Too Late _____

By: _____

Date: _____

Remarks: _____

SECTION 012600
CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications including the following:

1. Governing Agency approval.
2. Bulletins.
3. Architect's Supplemental Instructions.
4. Architect's Change Directive.
5. Requests for Proposals.
6. Change Order Requests.
7. Cost Change Directives.
8. Change Orders.
9. Weather related delays.

B. Related Requirements:

1. Division 00 Sections as applicable to contract requirements and modifications.
2. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
3. Division 01 Section "DSA Hourly Fee Services" for fees charged by DSA for changes to the Construction Documents.
4. Division 01 Section "Construction Progress Documentation" for contractor's construction schedule.

1.3 DEFINITIONS

A. Contract Modification: A change to the Contract Agreement between the Owner and the Contractor affecting the Contract Documents, the Contract Time, and/or the Contract Amount.

1.4 GOVERNING AGENCY APPROVAL

A. DSA Approval: Changes to DSA approved Construction Documents shall be reviewed and approved by DSA.

1. Changes to DSA Approved Construction Documents shall comply with requirements of DSA Interpretive Regulation IR A-6, “Construction Change Document Submittal and Approval Process” and shall be accompanied by DSA Form 140 “Application for Submittal of Post-Approval Document.”
2. Architect shall be responsible for preparing Construction Change Documents and submitting documentation to DSA.

B. DSA Hourly Fee Services: Changes to DSA approved Construction Documents shall be reviewed by DSA and shall be subject to DSA Hourly Fee Services. Charges will be made to the Owner by DSA.

1. Where changes to DSA approved Construction Documents are the result of actions by the Contractor, the Contractor shall be liable for DSA Hourly Fee Services as described in Division 01 Section “DSA Hourly Fee Services.”

1.5 BULLETINS

A. Bulletins: A form used by the Architect for issuing Architect’s Supplemental Instructions (ASI), Architect’s Change Directives (ACD), and Requests for Proposals (RFP).

1.6 ARCHITECT’S SUPPLEMENTAL INSTRUCTION

A. Architect’s Supplemental Instruction (ASI): Supplemental instructions will be issued by the Architect authorizing minor changes in the Work not involving adjustment to the Contract Sum or the Contract Time.

1. Architect’s Supplemental Instructions will be issued via Bulletin and signed by the Architect.
2. Contractor’s Response: Contractor shall perform the work indicated in the Architect’s Supplemental Instruction without adjustment to the Contract Sum or the Contract Time. If the Contractor determines that an adjustment to the Contract Sum or the Contract Time is necessary due to the Architect’s Supplemental Instruction, the Contractor shall respond to the Architect’s Supplemental Instruction as if it were an Architect/Owner initiated Request for Proposal.

B. DSA Review and Approval: Architect’s Supplemental Instructions affecting changes to the DSA Approved Construction Documents shall be subject to DSA review and approval; Architect shall submit applicable DSA CCD documentation to DSA for approval.

1.7 ARCHITECT’S CHANGE DIRECTIVE

A. Architect’s Change Directive (ACD): Architect’s Change Directives will be issued by the Architect instructing the Contractor to proceed with a change in the Work for subsequent inclusion in a Change Order.

1. Architect's Change Directives will be issued via Bulletin and signed by the Architect.
2. Architect's Change Directives contain a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation by Contractor: Maintain detailed records on a time and material basis of work required by the Architect's Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

C. DSA Review and Approval: Architect's Change Directives affecting changes to the DSA Approved Construction Documents shall be subject to DSA review and approval; Architect shall submit applicable DSA CCD documentation to DSA for approval.

1.8 REQUEST FOR PROPOSALS

A. Requests for Proposals: Requests for Proposals are Architect/Owner initiated requests for estimates of changes to the Contract Sum and/or Contract Time for proposed changes; Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. The description may include supplemental or revised Drawings and Specifications.

1. Requests for Proposals will be issued by the Architect via Bulletin.
2. Requests for Proposals are not authorization or instructions to either stop work in progress or execute proposed change(s).
3. Contractor's Response: Within not more than 7 days after receipt of Request for Proposal, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    e. Quotation Form: Use forms acceptable to Architect.

B. Architect's Response: Within 7 days after receipt of Contractor's response to Architect/Owner initiated Request for Proposal, Architect will:

1. Issue a Change Order or Cost Change Directive for accepted proposals.
2. Notify the Contractor of unaccepted proposals.

3. Issue an Architect's Change Directive where changes are necessary for the progress of the Work and changes to the Contract Sum and the Contract Time are in dispute.

1.9 CHANGE ORDER REQUEST

A. Change Order Request (COR): Change Order Requests are documents initiated by the Contractor requesting a Contract Modification due to unforeseen conditions, or latent or changed conditions.

1. Change Order Request Form: Use form acceptable to Architect.
2. Include a statement outlining reasons for the Change Order Request and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
3. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
4. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
5. Include costs of labor and supervision directly attributable to the change.
6. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
7. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

B. Architect's Response: Within 7 days after receipt of Contractor's Change Order Request, Architect will:

1. Issue a Cost Change Directive for accepted Change Order Requests that do not require changes to the approved Construction Documents.
2. Issue a Change Order and/or Cost Change Directive for accepted Change Order Requests that require changes to the approved Construction Documents.

   a. Where Change Order Requests require changes to the Contract Documents, Architect will provide a detailed description of proposed changes in the Work via Change Order.

3. Issue an Architect's Change Directive where changes are necessary for the progress of the Work and changes to the Contract Sum and the Contract Time are in dispute.
4. Notify the Contractor of unaccepted proposals.

1.10 COST CHANGE DIRECTIVE (CCD)

A. Cost Change Directive: A Cost Change Directive is a document issued by the Architect notifying Contractor of Owner’s acceptance of changes to the Contract Sum proposed by the Contractor.

1.11 CHANGE ORDERS

A. Change Orders: Change orders are a document defining Contract Modifications; upon Owner's approval of proposed Contract Modifications, Architect will issue a Change Order for signatures of Owner and Contractor on form provided by Architect.

B. DSA Review and Approval: Change Orders affecting changes to the DSA Approved Construction Documents shall be subject to DSA review and approval; Architect shall submit applicable DSA CCD documentation to DSA for approval.

1.13 WEATHER RELATED DELAYS

A. Extensions of contract time for delays caused by the effects of weather are justified only when rain or other weather conditions or related adverse soil conditions prevent the Contractor from productively performing controlling items of work resulting in the Contractor being unable to work at least 50% of the normal work day on predetermined controlling work items or the contractor must make major repairs to work damaged by weather provided the damage was not attributable to a failure to perform or neglect by the contractor.

B. Justification for weather related delays shall demonstrate the following:

1. The delay is within the terms and time frame of the contract.
2. The activity delayed had a direct effect on the project end date (The work item(s) affected is on the critical path).
3. The weather event occurred in excess of the anticipated weather for the season for the project location.
4. There is documentation of which specific activities were delayed on each weather occurrence.

C. Compensation: The Contractor will be granted a time extension only for justified weather-related delays for the number of days as accepted by the Architect, no monetary compensation will be granted (Weather event related delays are outside of the control of the Contractor and the Owner, and both parties share in the cost of time and expense).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012605
DSA HOURLY FEE SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Division of the State Architect (DSA) Interpretive Regulation IR A-30 “DSA Hourly Fee Services” latest edition (Document is available on DSA’s website under “Publications;” Interpretive Regulations (IRs); A- Administrative; IR-30).

https://www.dgs.ca.gov/dsa/

1.2 SUMMARY

A. Section includes administrative and procedural requirements for DSA Hourly Fee Services associated with changes to DSA approved Construction Documents.

B. Related Requirements:

1. Division 00 Sections as applicable to contract requirements and modifications.
2. Division 01 Section "Addenda."
3. Division 01 Section "Substitution Procedures."
4. Division 01 Section "Contract Modification Procedures."
5. Division 01 Section "Payment Procedures."
6. Division 01 Section "Submittal Procedures."
7. Division 01 Section "Product Requirements."

1.3 DSA HOURLY FEE SERVICES

A. General: Changes to DSA approved Construction Documents shall be documented by the use of DSA Construction Change Document (CCD) forms. CCD forms shall be submitted to DSA by the Architect.

1. Refer to Division 01 Section “Contract Modification Procedures” for additional information regarding DSA CCD’s.

B. DSA Hourly Fee Services: Changes to DSA approved Construction Documents shall be reviewed by DSA and shall be subject to DSA Hourly Fee Services for review at a rate established by DSA IR A-30. Charges will be made to the Owner by DSA.

1. Hourly Rate: Rate per hour as established by DSA IR A-30, latest edition.

C. Bidder's Responsibility: Prior to bidding, where a bidder's request for substitution or similar action results in a change requiring DSA Hourly Fee Services, bidder shall submit a deposit to the Architect for reimbursement for DSA Hourly Fee Services. The deposit amount shall be established by the Architect, a minimum of one hour of DSA Hourly Fee Services (hourly rate as established by DSA IR A-30) will not be refundable. Deposits shall be made payable to the Owner.

D. Contractor's Responsibility: When a contractor's action results in a change requiring DSA Hourly Fee Services, charges by DSA to the Owner will be deducted from the Contract Sum and the Architect will issue a Change Order on a quarterly basis to adjust the Contract Sum.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012613
REQUEST FOR INFORMATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for preparation, submittal and response to Contractor’s Request for Information (RFI’s) during construction of project.

1.3 DEFINITIONS

A. RFI, Request for Information: Request from Contractor seeking information required by or clarification of the Contract Documents.

1.4 SUBMITTALS

A. RFI Submittals: Submit RFI’s via email as PDF electronic files; include attachments in PDF electronic file format.

1.5 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Form: Use RFI form included at end of this Section or form acceptable to Architect. Upon request from the Contractor, the form at the end of this section will be made available in WORD format from the Architect.

D. Architect's Action: Architect will review each RFI, determine action required, and respond.

1. Allow 10 working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
2. Architect will not act on any RFI’s until 7 days following the submission of the Schedule of Values per Division 01 Section “Payment Procedures.”
3. The following RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor’s means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

4. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
5. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

6. Distribution: The Architect shall distribute one electronic copy of each completed RFI review to the Contractor and the Owner.

E. Regulatory Requirements: Architect's responses that modify the Contract Documents affecting Structural Safety, Fire and Life Safety, and/or Access Compliance shall be submitted to the Division of the State Architect for review and approval.

1. Changes to DSA approved Construction Documents shall be as specified in Division 01 Section "Contract Modification Procedures."

F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the sequential RFI number. Submit log weekly unless otherwise directed in writing by Architect. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

G. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within 7 days if Contractor disagrees with response.

H. Contractor's Expense for RFI's: Architect will review and respond to legitimate RFI's at no additional cost to the Contractor. RFI's determined by the Architect to be flagrant or unnecessary will have the expense for the Architect's time paid by the Owner with the amount being deducted from the Contract Sum. The expense will be based on an hourly rate in accordance with the Architect's standard hourly rate schedule in effect at the time the work is performed with a minimum of one hour for each flagrant or unnecessary RFI.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

(REQUEST FOR INFORMATION form included on the following page)

Request for Information

Corporate Headquarters
7535 N. Palm Ave. #201
Fresno, CA 93711

559.437.0887 T
559.438.7554 F
teterae.com

Project:
MCSD | Fencing Projects
RFP 2025-##
Various Sites

Client Project No.
RFP 2025-##

Date:

Request for Information No.
_____

☐ Deviation from Contract Docs
☐ Correction of Non-Compliant Work

From:

To:
Chris Nikkel
Project Architect
TETER, Inc.
Chris.nikkel@teterae.com
CC: robert.dinuzzo@teterae.com

Drawing:_____

Detail No._____

Specification:_____

Addendum:_____

Respond by:

Priority
(Low) 1 2 3 4 5 (High)

Subject: _____

Information Requested:

Contractor's Recommendation:

Probable Cost Effect: _____ Probable Time Effect: _____

Architect's Response:

Disclaimer
The work shall be carried out in accordance with the above supplemental instructions pursuant the Contract Documents, without change in the Contract Sum or Contract Time. Proceeding with the Work, according to these instructions, indicates your acknowledgement that there will be no change in the Contract Sum or Contract Time. If the Contractor considers that this response requires a change in the Contract Sum or Contract Time, the Contractor shall not proceed with this Work and shall promptly submit an item proposal.

SECTION 012900
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections:

1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
3. Division 01 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with continuation sheets.
b. Submittal schedule.
c. Items required to be indicated as separate activities in Contractor's construction schedule.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than 7 days before the date scheduled for submittal of initial Applications for Payment.

    a. Architect will not act on any RFI's, Post-Bid Substitutions, and/or changes to the project scope, cost, or schedule until 7 days following the submission of the Schedule of Values.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Name of Architect.
    c. Architect's project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Provide a breakdown of the Contract Sum separated into a total cost for each Project Site. Process payments shall include sub-totals for each project site, and totals for the Contract Payment.

    a. Site 1: John C. Fremont Elementary School
    b. Site 2: Herbert Hoover Middle School
    c. Site 3: John Muir Elementary School

3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of the Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

        1) Labor.
        2) Materials.
        3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of 5 percent of Contract Sum.

a. Include separate line items under Contractor and principal subcontracts for project closeout requirements in an amount totaling 5 percent of the Contract Sum and subcontract amount.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment application shall be as indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

   1. If dates and periods are not indicated in the Agreement between Owner and Contractor at time of bidding, the date for Application for Payment shall be established by the Owner to correspond with the Owner’s administrative procedures in order to allow for processing and approval of Application for Payment. The period of construction work covered by each Application for Payment shall be one month.
   2. Submit draft copy of Application for Payment 7 days prior to due date for review by Architect.

C. Application for Payment Forms: Use forms acceptable to Architect and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Materials previously stored and included in previous Applications for Payment.
    b. Work completed for this Application utilizing previously stored materials.
    c. Additional materials stored with this Application.
    d. Total materials remaining stored, including materials with this Application.

F. Transmittal: Submit 6 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Submittal schedule (preliminary if not final).
5. List of Contractor's staff assignments.
6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
7. Initial progress report.
8. Report of preconstruction conference.

I. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portions of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Updated final statement, accounting for final changes to the Contract Sum.
3. Evidence that claims have been settled.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013113
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Administrative and supervisory personnel.

B. Related Sections:

1. Division 01 Section "Project Meetings" for project meetings.
2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
3. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
4. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 SUBMITTALS

A. List of Key Personnel Names: Within 15 calendar days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013119
PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for project meetings, including, but not limited to, the following:

1. Preconstruction conferences.
2. Progress meetings.
3. Project Closeout Conference.

B. Related requirements include but are not limited to the following:

1. Division 01 Sections as applicable to project management.

1.3 PRECONSTRUCTION CONFERENCE

A. Preconstruction Conference: Schedule a preconstruction conference before starting construction at the project site, at a time convenient to the Owner, and the Architect, but no later than 14 days after execution of the Agreement. Hold the conference at the Project Site or another convenient location. Owner and Architect to conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: Authorized representatives of the Owner, Architect, and their consultants; the Contractor and its superintendent shall attend the conference. Major subcontractors and other concerned parties shall be invited to attend the conference, but attendance is not mandatory. Participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including but not limited to the following:

1. Tentative construction schedule.
2. Critical work sequencing and long-lead items.
3. Designation of key personnel and their duties.
4. Lines of communication.
5. Procedures for processing field decisions and Change Orders.
6. Procedures for processing Applications for Payment.
7. Procedures for RFI’s.

8. Procedures for testing and inspection.
9. Submittal procedures.
10. Sustainability requirements including construction waste management and disposal.
11. Preparation of record documents.
12. Use of the premises.
13. Work restrictions and working hours.
14. Temporary facilities and controls.
15. Parking availability.
16. Office, work, and storage areas.
17. Equipment deliveries and priorities.
18. Safety procedures and first aid.
19. Security.
20. Housekeeping.
21. Owner’s alcohol, drug and tobacco policy.

D. Minutes: Contractor shall record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.

1.4 PROGRESS MEETINGS

A. Progress Meetings: Conduct progress meetings at the Project Site at regular intervals to be established by the Architect, Project Inspector, Contractor, and Owner.

1. Coordinate dates of meetings with preparation of the payment request.

B. Attendees: In addition to representatives of the Owner and Architect, each subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project. Review proposed percentages of work completed for current months progress payment.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

2. Review the present and future needs of each entity present, including the following:

    a. Interface requirements.
    b. Sequence of operation.
    c. Status of submittals.
    d. Status of Sustainability documentation.
    e. Deliveries.
    f. Off-site fabrication.
    g. Access.
    h. Site utilization.
    i. Temporary facilities and services.
    j. Status of correction of deficient items.
    k. Field observations.
    l. Status of RFI's, Proposal Requests, and Change Orders.
    m. Progress cleaning.
    n. Quality and work standards.
    o. Documentation of information for payment requests.
    p. Request for Information

D. Minutes: Contractor shall record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.

E. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule to the Owner, the Architect, and all other parties involved in the project. Failure to revise and keep current the Contractor's construction schedule may be grounds for returning Application for Payment unreviewed.

1.5 PROJECT CLOSEOUT CONFERENCE

A. Project Closeout Conference: Conduct a project closeout conference, at a time convenient to Owner and Architect, but not less than 90 days prior to the scheduled date of Substantial Completion. Conduct the conference to review requirements and responsibilities related to Project closeout.

B. Attendees: Authorized representatives of Owner, Architect and their consultants; Contractor and its superintendent. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

    1. Preparation of record documents.
    2. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    3. Submittal of written warranties.
    4. Requirements for completing Sustainability documentation.
    5. Requirements for preparing operations and maintenance data.

6. Requirements for delivery of material samples, attic stock, and spare parts.
7. Requirements for demonstration and training.
8. Preparation of Contractor's punch list.
9. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
10. Submittal procedures.
11. Responsibility for removing temporary facilities and controls.

D. Minutes: Contractor shall record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013200
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's construction schedule.
2. Reports.
3. Scheduling for weather-related delays.

B. Related Sections include but are not limited to the following:

1. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
2. Division 01 Section "Quality and Testing Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

F. Milestone: An activity, which occurs in an instant and thus has no time duration, a key or critical point in time for reference or measurement.

1.4 SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.

B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit electronic copy of schedule labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

D. Construction Schedule Updating Reports: Submit with Applications for Payment.

E. Special Reports: Submit at time of unusual event.

1.5 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Meetings." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
1. Discuss constraints, including Owner occupancy
2. Review delivery dates for Owner-furnished products.
3. Review schedule for work of Owner's separate contracts.
4. Review submittal requirements and procedures.
5. Review time required for review of submittals and resubmittals.
6. Review requirements for tests and inspections by independent testing and inspecting agencies.
7. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
8. Review and finalize list of construction activities to be included in schedule.

9. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.7 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Temporary Facilities: Indicate start and completion dates for the following as applicable:

    a. Securing of approvals and permits required for performance of the Work.
    b. Temporary facilities.
    c. Construction of mock-ups, prototypes and samples.
    d. Owner interfaces and furnishing of items.
    e. Interfaces with Separate Contracts.
    f. Regulatory agency approvals.
    g. Punch list.

3. Procurement Activities: Include procurement process activities for long lead time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
4. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
5. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
6. Commissioning Time: Include no fewer than 15 days for commissioning.
7. Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

8. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work Areas: Arrange an individual schedule for each project site.

    a. Site 1: John C Fremont Elementary School.
    b. Site 2: Herbert Hoover Middle School.
    c. Site 3: John Muir Elementary School.

2. Phasing: Arrange list of activities on schedule by phase.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use of premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

    a. Submittals.
    b. Purchases.
    c. Mockups.
    d. Fabrication.
    e. Sample testing.
    f. Deliveries.
    g. Installation.
    h. Tests and inspections.
    i. Adjusting.
    j. Curing.
    k. Startup and placement into final use and operation.
    l. Commissioning.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area

must be sequenced or integrated with other construction activities to provide for the following:

a. Structural completion.
b. Temporary enclosure and space conditioning.
c. Permanent space enclosure.
d. Completion of mechanical installation.
e. Completion of electrical installation.
f. Substantial Completion.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

G. Weather Related Delays: Construction schedule shall include the number of weather-related delay days for each calendar month as indicated below.

J	F	M	A	M	J	J	A	S	O	N	D
6	6	5	4	2	1	0	0	0	2	3	5

1. Delay days shall be cumulative for the duration of the project; where the actual number of delay days are less than the scheduled delay days for a given month, the unused days shall be carried forward to the next month.
2. Unused delay days may be used as float time.

H. Contractor's Construction Schedule Updating: At not less than monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

I. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

J. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.8 REPORTS

A. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

B. Special Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable. Submit Special Reports to Architect within two days of an occurrence. Distribute copies of report to parties affected by the occurrence.

1. Weather Event Reports: Prepare Special Reports for weather related events that affect or prevent progress of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013233
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.

B. Related Sections:
1. Division 31 Section "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 SUBMITTALS

A. Digital Photographs: Submit image files at monthly intervals coinciding with the cutoff date associated with each Application for Payment.

1. Submit photos by uploading to Project FTP site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description:

a. Date photograph was taken.
b. Description of location, vantage point, and direction.
c. Unique sequential identifier keyed to accompanying key plan.

3. Key Plan: Include key plan of Project site and/or building(s) indicating location and direction of each photograph or group of photographs. Include same information as corresponding photographic documentation.

1.4 PHOTOGRAPHIC FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

C. File Names: Name media files with location or area photograph was taken, date, and sequential numbering suffix.

1.5 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs with maximum depth of field and in focus.

B. Key Plan: Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and adjacent areas, including existing items to remain during construction, from different vantage points, as necessary to record preconstruction conditions.

1. Take additional photographs as needed to record settlement or cracking of existing adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take photographs to record construction progress at not greater than bi-weekly intervals with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013300
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
3. Cost for multiple resubmittals.

B. Related Sections:

1. Division 01 Section “Payment Procedures” for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Project Management and Coordination" for submitting coordination drawings.
3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Division 01 Section "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and final completion construction photographs.
5. Division 01 Section "Quality and Testing Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
6. Division 01 Section "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
7. Division 01 Section "Project Record Drawings" for submitting record Drawings.

1.3 SUBMITTAL SCHEDULE

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

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Name of subcontractor.
    d. Description of the Work covered.
    e. Scheduled date for Architect's final release or approval.
    f. Scheduled dates for purchasing.
    g. Scheduled date of fabrication.
    h. Scheduled dates for installation.
    i. Activity or event number.

1.4 SUBMITTAL FORMAT AND PROCEDURES

A. General: Prepare and submit submittals required by individual Specification Sections.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.
2. Architect will not review submittals received from sources other than the Contractor.

B. Electronic Digital Submittals: Prepare submittals as PDF package unless otherwise indicated, incorporate complete information into each PDF file, name PDF file with submittal number, and transmit submittal package to Architect via email.

1. Paper Submittals: Where paper submittals are requested, necessary, or required in lieu of electronic submittals, prepare submittals in paper form and deliver to Architect. Transmit each paper submittal using transmittal form. Comply with the following:

    a. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
    b. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
    c. Number of Copies: Submit not less than three paper copies of each submittal unless otherwise indicated. Architect will return two copies.

d. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using transmittal form.

C. Submittal Cover Page Information: Include the following information on the submittal cover page for each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
8. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
9. Drawing number and detail references, as appropriate.
10. Indication of full or partial submittal.
11. Location(s) where product is to be installed, as appropriate.
12. Other necessary identification.
13. Remarks.
14. Signature of transmitter.
15. Contractor’s review/approval stamp of size required by contractor, approximately 3 inches by 3 inches, on or beside title block to record Contractor's review and approval.
16. Space for Architect’s review stamp of not less than 4 inches wide by 3-1/2 inches high on or beside title block to record Architect’s review stamp and action taken by Architect.

D. Product Options:

1. Clearly identify options requiring selection by Architect.
2. Clearly identify product options required to comply with the Contract Documents.

E. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

F. Field Conditions: Indicate field conditions where applicable to the work associated with the submittal.

G. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate timing of submitting submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review related submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

H. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 14 calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 14 calendar days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 calendar days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 14 calendar days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

    a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

K. Use for Construction: Retain complete copies of submittals on Project site. Use only final submittals that are marked with acceptable notation from Architect's action stamp.

1.5 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.

e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Drawing Sheet Size: Except for templates, patterns, and similar full-size Drawings, prepare Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Submit Shop Drawings in PDF format unless otherwise indicated.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Submit samples in PDF format unless physical samples are required.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of

repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two (2) Sample sets; remainder will be returned.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.6 CONTRACTOR'S REVIEW

A. Contractor’s Review of Submittals: Contractor shall review each submittal and check for completeness, coordination with other Work of the Contract, and compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and

statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.
2. Contractor’s approval shall certify the following actions by the Contractor:

    a. Field measurements have been determined, verified, and indicated on submittal.
    b. Field conditions have been verified and coordinated with Work associated with the submittal.
    c. The Work associated with the submittal is in conformance with the Contract Documents.
    d. Work being performed by various subcontractors and trades is coordinated with Work associated with the submittal including work being performed by others for the Owner.
    e. Deviations from the Contract Documents are identified and notes.

1.7 ARCHITECT'S REVIEW

A. Architect’s Review and Action: Architect will review each submittal, indicate corrections or revisions required, mark with an action stamp indicating one of the following actions, and return it.

1. Reviewed: Final unrestricted release, work may proceed, provided it complies with the Contract Documents.
2. Furnish as Corrected: Final but restricted release, work may proceed, provided written confirmation is delivered to Architect by Contractor that installed work complied with notations and corrections on submittal and with Contract Documents.
3. Revise and Resubmit: Returned for resubmittal, do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain an acceptable action marking. Do not allow submittals with this marking (or unmarked submittals where a marking is required) to be used in connection with performance of the Work.
4. Rejected: Submittal content varies from the Contract Documents and is not acceptable for use on the Project, do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain an acceptable action marking. Do not allow submittals with this marking (or unmarked submittals where a marking is required) to be used in connection with performance of the Work.

B. Non-conforming Submittals: The following are considered non-confirming submittals and will not be reviewed by the Architect.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.
2. Architect will not review submittals received from sources other than the Contractor.

3. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
4. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

C. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

1.8 COST FOR MULTIPLE RESUBMITTALS

A. Contractor's initial submittal and one resubmittal are included in the Architect's Construction Administration services to the Owner. Architect's services for review of subsequent resubmittals will be charged to the Owner at the Architect's current billing rate, and the Owner will deduct the charges from the Contract Amount by a change order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 014000
QUALITY AND TESTING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control including but not limited to the following:

1. General quality requirements.
2. Reports and documents.
3. Contractor’s responsibilities for testing and inspections.
4. Project Inspector.
5. Testing Agency.
6. Governing agency testing and inspection requirements.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Requirements:

1. Divisions 02 through 33 Sections for specific test and inspection requirements.

D. DSA Testing and Inspection Requirements for School Construction: The following requirements are per the Division of the State Architect (DSA); requirements indicated below may be repeated elsewhere in this Section or in other Sections of the Project Manual, where conflicts occur, the most stringent condition shall apply.

1. Tests:

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

2. Tests Reports: One copy of all test reports shall be forwarded to the Division of the State Architect by the testing agency. Such reports shall include all the tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of Title 24 and with the approved specifications. Test reports shall show the specified design strength. They shall also state defiantly whether or not the material or materials tested comply with requirements.
3. Verification of Test Reports: Each testing agency shall submit to the Division of the State Architect a verified report in duplicate covering all the tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, covering the tests up to that time, and at the completion of the project, covering all tests.
4. Inspection by the Owner:

a. The Owner and his representatives shall at all times have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for such inspection.
b. The Owner shall have the right to reject materials and workmanship which are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does no correct such rejected work within a reasonable time, fixed by written notice, the Owner may correct same and charge expense to the Contractor.
c. Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of the work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to the fault of the Contractor or his subcontractor, he shall defray all expenses of such examinations and of satisfactory reconstruction. If however, such work is found to meet the requirements of the Contract, the additional cost

of labor and material necessarily involved in the examination and replacement shall be allowed the Contractor.

5. Owner's Project Inspector:

   a. A Project Inspector employed by the Owner, and approved by DSA, in accordance with the requirements of the California Code of Regulations, Title 24 will be assigned to the work. The Project Inspector's duties are defined in Title 24, Part I, Sec. 4-342.
   b. The work of construction in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. The Project Inspector shall have free access to any or all parts of the work at any time. The Contractor shall furnish the Project Inspector reasonable facilities for obtaining such information as may be necessary to keep the Project Inspector fully informed respecting the progress and manner of the work and the character of materials. Inspection of the work shall not relieve the Contractor from any obligation to fulfill this contract.

1.3 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

   1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

   1. Laboratory Mockups: Full-size physical assemblies constructed and tested at testing facility to verify performance characteristics.
   2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as indicated in-place portions of permanent construction, consisting of multiple products, assemblies, and

subassemblies, with cutaways enabling inspection of concealed portions of the Work.

a. Include each system, assembly, component, and part of the exterior wall and/or roof to be constructed for the Project. Colors of components shall be those selected by the Architect for use in the Project.

3. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
4. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

H. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

I. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

J. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to

Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.5 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.6 INFORMATIONAL SUBMITTALS

A. Reports: Prepare and submit certified written reports and documents as specified.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Reports shall be prepared by the person performing the testing and inspecting. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Governing Agency Verified Reports: Complete and submit Verified Reports as required by the Division of the State Architect and the California Administrative Code, Section 4-

336. Reports are required to be completed by Architect, Architect’s consulting Engineers, Owner’s Project Inspector, Contractor, and Testing Agency.

1. Form:

    a. DSA form DSA-6C for Contractor.
    b. DSA form DSA-6PI for Project Inspector.
    c. DSA form DSA-6A/E for Architect and Architect’s consulting Engineers.

C. Manufacturer's Technical Representative's Field Reports: Provide written information documenting manufacturer’s technical representative’s tests and inspections specified in other Sections. Reports shall be prepared by Manufacturer's technical representative performing the testing and inspecting. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

D. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Reports shall be prepared by Factory-authorized service representative performing the testing and inspecting. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally licensed to practice in the state where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.9 PROJECT INSPECTOR

A. General: Owner will employ a Project Inspector for continuous inspection of the Work. Project Inspector shall be acceptable to Architect and approved by the Division of the State Architect.

1. Project Inspector shall act under the direction of the Architect and shall be subject to supervision by a representative of the Division of the State Architect.

B. Qualifications for Project Inspector: Qualifications for the Project Inspector shall be as stated in the California Code of Regulations, Title 24, Part 1, California Administrative Code, Section 4-333.1. Project Inspector shall be DSA certified under one of the following classes:

1. Class 1: May inspect any project.
2. Class 2: May inspect any project except a project containing one or more new large structures with a primary lateral load resisting system of steel, masonry, or concrete.
3. Class 3: May inspect projects containing alterations to approved buildings, site placement of relocatable buildings, and construction of minor structures.
4. Class 4: May inspect site placement of relocatable buildings and associated site work.

C. Duties of the Project Inspector: Duties of the Project Inspector shall be as stated in the California Code of Regulations, Title 24, Part 1, California Administrative Code, Sections 4-333(b) and 4-342, and include the following:

1. Provide continuous inspection of the work.
2. Maintain files and records of approved plans and specifications including addenda and change orders.
3. Prepare semi-monthly reports of the progress of the work and submit copies to the Architect and the Division of the State Architect.
4. Notify the Division of the State Architect at the following times:

    a. At the start of construction of the project or restart of construction if work has suspended for a period of 2 or more weeks.
    b. At least 48 hours in advance of the time when foundation trenches will be complete, ready for footing forms.
    c. At least 48 hours in advance of the first placement of foundation concrete and 24 hours in advance of any subsequent or significant concrete placement.
    d. When all work on the project has been suspended for a period of more than 2 weeks.

5. Prepare and maintain records of certain phases of construction including but not limited to the following:

    a. Concrete placing operations. Show date and time of placing concrete and the time and date of removal of forms in each portion of the structure.
    b. Welding operations. The record shall include identification marks of welders, lists of defective welds, and manner of correction of defects.

6. Notify the Contractor, in writing, of any deviations from the approved construction documents.
7. Prepare and submit Project Inspector’s Verified Report as required by DSA.

1.10 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to conduct tests and

inspections required by authorities having jurisdiction. Testing agency shall be acceptable to Architect and the Division of the State Architect. Requirements for tests and testing agency shall be as stated in the California Code of Regulations, Title 24, Part 1, California Administrative Code, Section 4-335.

1. Costs for testing agency services will be paid by the Owner.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be paid by the Owner and the amount will be deducted from the Contract Sum by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
7. Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

    a. Access to the Work.
    b. Incidental labor and facilities necessary to facilitate tests and inspections.
    c. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
    d. Facilities for storage and field curing of test samples.
    e. Preliminary design mix proposed for use for material mixes that require control by testing agency.
    f. Security and protection for samples and for testing and inspecting equipment at Project site.

8. Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

a. Schedule times for tests, inspections, obtaining samples, and similar activities.

9. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.

   a. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
   b. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

   1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct tests and inspections.
   4. Prepare written reports of tests and inspections, state in each report whether tested and inspected Work complies with or deviates from requirements, and submit reports of each test, inspection, and similar quality-control service to Architect, Division of the State Architect, and Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

1.11 TESTS AND INSPECTIONS

A. Structural Tests and Inspections shall be as specified in Division 02 through 33 Sections for specific materials and as required by form DSA-103 which lists tests and inspections required by DSA as applicable to Project conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 014200
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract. Architect’s approval does not release the Contractor from the responsibility to fulfill Contract requirements.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

   1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

   1. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
   2. ICC - International Code Council; www.iccsafe.org.
   3. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

   1. COE - Army Corps of Engineers; www.usace.army.mil.
   2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
   3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
   4. DOD - Department of Defense; www.quicksearch.dla.mil.
   5. DOE - Department of Energy; www.energy.gov.
   6. EPA - Environmental Protection Agency; www.epa.gov.

7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeial Convention; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).
5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.

6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
3. CDHS; California Department of Health Services; (See CDPH).
4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
6. DSA; Division of the State Architect.
7. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
8. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservice.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Division 01 Section "Summary of Work" for work restrictions and limitations on utility interruptions.
2. Division 01 Section “Fire Safety During Construction” for fire safety requirements during construction.
3. Division 31 Sections applicable to site clearing, earthwork, and trenching for temporary erosion and sedimentation control.

1.3 USE CHARGES

A. General: Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Owner, Architect, testing agencies, and authorities having jurisdiction.

B. Water Service from Existing System: Water from Owner's existing water system is available for use; provide connections and extensions of services as required for construction operations.

1. Water service is available for use without metering and without payment of use charges.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is not available for use. Provide portable power sources and all connections and extensions of service required for construction operations.

1.4 SUBMITTALS

A. Erosion and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1. Comply with submittal requirements of Division 31 through 33 Sections as applicable for temporary erosion and sedimentation control plans.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 REGULATORY REQUIREMENTS

A. Regulatory Requirements: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. California Code of Regulations, Title 24, California Code requirements as applicable to the project.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations.
6. Regional Air Pollution Control District permits and requirements.
7. California Department of Water Resources, Stormwater General Permit for projects with site work area greater than one acre.
8. Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Materials for temporary facilities shall be acceptable to Architect, Owner, and Authorities having Jurisdiction (AHJ), shall be appropriate for intended use, and shall comply with governing codes and regulations.

B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts. Provide concrete or galvanized-steel bases for supporting posts.

C. Fencing Windscreen: Polyester fabric scrim with grommets for attachment to chain link fence, size and color as acceptable to, or required by, authorities having jurisdiction.

D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

2.2 TEMPORARY STORAGE FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from buildings.

2.3 TEMPORARY SANITARY FACILITIES

A. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use by construction and related administrative personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Temporary toilets shall be self-contained, single-occupant units of the chemical, aerated recirculation type; provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Use of Owner’s sanitary facilities is not permitted.

1. Accessibility Requirements: Sanitary facilities serving support facilities such as offices, meeting rooms, plan rooms, and serving personnel not directly associated with the actual processes of construction shall be accessible for a person using a wheelchair and shall comply with CBC Section 11B-213 (Ref. CBC 11B-201.4).

2.4 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

A. Locate facilities at locations directed by the Owner where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITIES AND BUILDING HVAC

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Existing Water Service: Where connection to Owner's existing water service is available and allowed, clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Electric Power Service: Provide portable electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Locate storage containers, and other temporary construction and support facilities for easy access in the areas designated and approved by the Architect and Owner. Comply with the following:

1. Do not locate temporary offices, shops, and sheds within 30 feet of building lines.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after

Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities is not permitted.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Parking areas for construction personnel shall be at location(s) as directed by Owner.

E. Storage and Staging: Use designated areas of Project site for storage and staging needs.

F. Dewatering: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations.

1. Comply with requirements of the following:

a. Authorities having jurisdiction.
b. Division 01 Section "Execution" for progress cleaning.
c. Division 01 Section "Construction Waste Management and Disposal."

2. Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

   1. Comply with work restrictions specified in Division 01 Section "Summary of Work."

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements erosion and sedimentation-control Drawings, EPA Construction General Permit, or authorities having jurisdiction, whichever is more stringent.

   1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree or plant- protection zones.
   2. Inspect, repair, and maintain erosion and sedimentation-control measures during construction until permanent vegetation has been established.
   3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
   4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Security Enclosure Fence and Lockup: Before construction operations begin, furnish and install project enclosure fence in a manner that will prevent people and animals from easily entering the site except by entrance gates. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

   1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Instruct personnel in methods and procedures. Post warnings and information.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

SECTION 015116
FIRE SAFETY DURING CONSTRUCTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Requirements for fire safety during construction and demolition.
2. Requirements for submittal of Contractor's Site Safety Plan (SSP).

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for additional facilities, requirements, and procedures required during construction.

1.3 SUBMITTALS

A. Site Safety Plan: Submit Site Safety Plan (SSP) as required by California Fire Code (CFC) Section 3303.1.1.

1. Submit SSP in pdf format to Architect, Architect will submit SSP to DSA.

a. DSA Form 102-IC (Construction Start Notice) requires a SSP to be submitted separately and in conjunction with Form 102-IC; failure to include the SSP will result in rejection of the DSA Form 102-IC.
b. Submit SSP to Architect within 7 calendar days of Notice of Award.

1) Additional Contract Time will not be granted for failure of DSA to approve or accept the Contractor's SSP.

2. The Contractor shall be responsible for the development, implementation and maintenance of an approved, written SSP establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration or demolition work. The plan shall address the requirements of CFC Chapter 33 and other applicable portions of the CFC, the duties of staff and staff training requirements. The SSP shall be submitted and approved by the governing agency before the start of construction. Any changes to the SSP shall be submitted for approval.

a. SSP shall include the following information as applicable (Per CFC Section 3303.1.1):

1) Name and contact information of site safety director.
2) Documentation of the training of the site safety director and fire watch personnel.
3) Procedures for reporting emergencies.
4) Fire department vehicle access routes.
5) Location of fire protection equipment including portable fire extinguishers, standpipes, fire department connections and fire hydrants.
6) Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with CFC Section 3305.8.
7) Location and safety considerations for temporary heating equipment.
8) Hot work permit plan.
9) Plans for control of combustible waste material.
10) Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.
11) Provisions for site security.
12) Changes that affect this plan.
13) Other site-specific information required by the fire code official.

1.4 REGULATORY REQUIREMENTS

A. Regulatory Requirements: Comply with applicable provisions of the following:

1. NFPA 241.
2. California Fire Code, 2022 Edition, Chapter 33 “Fire Safety During Construction and Demolition” and the 2022 Editions of the following California Codes as Referenced by the California Fire Code:

a. California Building Code (CBC).
b. California Mechanical Code (CMC).
c. California Plumbing Code (CPC).
d. California Electrical Code (CEC).

B. Responsibility for Fire Protection (CFC 3303)

1. Program Development and Maintenance: The Contractor shall be responsible for the development, implementation and maintenance of an approved written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration, or demolition work. The plan shall address the requirements of CFC Section 3303.1
2. Site Safety Director: The Contractor shall designate a person to be the Site Safety Director. The Site Safety Director shall be responsible for ensuring compliance with the site safety plan. The Site Safety Director shall have the authority to enforce the provisions of the California Fire Code, Chapter 33, and other provisions as necessary to secure the intent of the California Fire Code,

Chapter 33. Where guard service is provided in accordance with NFPA 241, the Site Safety Director shall be responsible for the guard service.

3. Daily Fire Safety Inspection: The Site Safety Inspector shall be responsible for completion of a daily fire safety inspection at the project site. Each day, all building and outdoor areas shall be inspected to ensure compliance with the inspection list in California Fire Code Section 3303.3. The results of each inspection shall be documented and maintained on-site util a certificate of occupancy has been issued. Documentation shall be immediately available on-site for presentation to the fire code official upon request.

    a. Qualifications: Site Safety Directors shall acquire training specific to their roles and responsibilities. Upon request, the training and qualifications of the Site Safety Director shall be submitted to the fire code official for approval.

4. Training: Training of fire watch and other responsible personnel in the use of fire protection equipment shall be the responsibility of the Site Safety Director. Records of training shall be kept and made a part of the written plan for the Site Safety Plan.
5. Fire Protection Devices: The Site Safety Director shall ensure that all fire protection equipment is maintained and serviced in accordance with the California Fire Code. Fire protection equipment shall be inspected in accordance with the fire protection program.
6. Hot Work Operations: The Site Safety Director shall ensure hot work operations and permit procedures are in accordance with the California Fire Code, Chapter 35.
7. Impairment of Fire Protection Systems: The Site Safety Director shall ensure impairments to any fire protection system are in accordance with California Fire Code, Section 901.

    a. Smoke detectors and smoke alarms located in an area where airborne construction dust is expected shall be covered to prevent exposure to dust or shall be temporarily removed. Smoke detectors and alarms that were removed shall be replaced upon conclusion of dust producing work. Smoke detectors and smoke alarms that were covered shall be inspected and cleaned, as necessary, upon conclusion of dust producing work.

8. Temporary Covering of Fire Protection Devices: Coverings placed on or over fire protection devices to protect them from damage during construction processes shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.

C. Temporary Heating Equipment (CFC 3304):

1. Listing: Temporary heating devices shall be listed and labeled. Installation, maintenance and use of temporary heating devices shall be in accordance with the terms of the listing and the manufacturer's directions.
2. LP-Gas Heaters: Fuel supplies for liquified petroleum gas fired heaters shall comply with California Fire Code, Chapter 61 Liquefied Petroleum Gases, and the California Mechanical Code.

3. Refueling: Refueling operations for liquid fueled equipment or appliances shall be conducted in accordance with the California Fire Code, Section 5705. The equipment or appliance shall be allowed to cool prior to refueling.
4. Installation: Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with the manufacturer's instructions.
5. Supervision: The use of temporary heating devices shall be supervised and maintained only by competent personnel.
6. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

D. Precautions Against Fire (CFC 3305):

1. Smoking: Smoking shall not be allowed on the project site.
2. Combustible Debris, Rubbish and Waste:

    a. Combustible debris, rubbish and waste shall not be accumulated within buildings.
    b. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.
    c. Rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) used for temporary storage of combustible debris, rubbish and waste materials, shall have tight fitting or self-closing lids. Such containers shall be constructed entirely of materials that are non-combustible or materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.
    d. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.

3. Burning: Burning of materials shall not be allowed on the project site.
4. Fire Watch: Where required by the fire code official or the Site Safety Plan established in accordance with California Fire Code Section 3303.1, a fire watch shall be provided for building demolition and for building construction.

    a. Fire Watch During Construction: A fire watch shall be provided during non-working hours for new construction that exceeds 40 feet in height above the lowest adjacent grade at any point along the building perimeter, for new multi-story construction with aggregate area exceeding 50,000 sf per story or as required by the fire code official.
    b. Fire Watch Personnel:

        1) Duties: The primary duty of fire watch personnel shall be to perform constant patrols and watch for the occurrence of fire. The combination of fire watch duties and site security duties is acceptable.
        2) Training: Personnel shall be trained to serve as an on-site fire watch. Training shall include the use of portable fire extinguishers. Fire extinguishers and fire reporting shall be in accordance with California Fire Code, Section 3310.

3) Means of Notification: Fire watch personnel shall be provided with not fewer than one approved means for notifying the fire department.

c. Fire Watch Location: The fire watch shall include areas specified by the Site Safety Plan established in accordance with California Fire Code Section 3303.
d. Fire Watch Records: Fire watch personnel shall keep a record of all time periods of duty, including the log entry for each time the site was patrolled and each time a structure was entered and inspected. Records shall be made available for review by the fire code official upon request.

5. Cutting and Welding: Welding, cutting, open torches, and other hot work operations and equipment shall comply with California Fire Code Chapter 35 “Welding and Other Hot Work.’
6. Temporary Wiring for Electrical Power: Temporary wiring for electrical power and lighting installations used in connection with the construction, alteration or demolition of buildings, structures, equipment, or similar activities shall comply with the California Electrical Code.

E. Flammable and Combustible Liquids (CFC 3306):

1. Storage of Flammable and Combustible Liquids: Storage of flammable and combustible liquids shall be in accordance with California Fire Code Section 5704.
2. Class I and Class II Liquids: Storage, use, and handling of flammable and combustible liquids at construction sites shall be in accordance with California Fire Code Section 5706.2. Ventilation shall be provided for operations involving the application of materials containing flammable solvents.
3. Housekeeping: Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste materials. Such storage areas shall not be used for the storage of combustible materials.
4. Precautions Against Fire: Sources of ignition and smoking shall be prohibited in flammable and combustible liquid storage areas. Signs shall be posted in accordance with California Fire Code Section 310.
5. Handling at Point of Final Use: Class I and Class II liquids shall be kept in approved safety containers.
6. Leakage and Spills: Leaking vessels shall be immediately repaired or taken out of service and spills shall be cleaned up and disposed of properly.

F. Flammable Gases (CFC 3307):

1. Storage and Handling: Storage and handling of flammable gasses shall comply with California Fire Code Chapter 58 “Flammable Gases and Flammable Cryogenic Fluids.”
2. Cleaning with Flammable Gases: Flammable gases shall not be used to clean or remove debris from piping open to the atmosphere.

G. Explosive Materials (CFC 3308): Explosive materials shall not be allowed.

H. Portable Generators (CFC 3309): Portable generators used at construction and demolitions sites shall comply with California Fire Code Section 1204

I. Fire Reporting (CFC 3310)

1. Emergency Telephone: Emergency telephone facilities with ready access shall be provided in an approved location at the construction site, or an approved equivalent means of communication shall be provided. The street address of the construction site and the emergency telephone number of the fire department shall be posted adjacent to the telephone. Alternatively, where an equivalent means of communication has been approved, the site address and fire department emergency telephone number shall be posted at the main entrance to the site, in guard shacks, and in the construction site office.

J. Access for Fire Fighting (CFC 3311):

1. Required Access: Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.
2. Key Boxes: Key boxes shall be provided as required by California Fire Code Chapter 5 “Fire Service Features.”

K. Means of Egress (CFC 3312):

1. Stairways Required: Where building construction exceeds 40 feet in height above the lowest level of fire department vehicle access, a temporary or permanent stairway shall be provided.
2. Means of Egress: Required means of egress and required accessible means of egress shall be maintained during construction and demolition, remodeling or alterations and additions to any building unless an approved temporary means of egress system is provided.
3. Combustible Materials Storage: Combustible materials associated with construction, demolition, remodeling or alterations to an occupied structure shall not be stored in exits, enclosures for stairs, or exit access corridors serving an occupant load of 30 or more.

L. Portable Fire Extinguishers (CFC 3316):

1. Portable Fire Extinguishers: Structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with the California Fire Code, Section 906 and sized for not less than ordinary hazard, as follows:

    a. In every storage and construction shed.
    b. Additional portable fire extinguishers shall be provided where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids.

M. Motorized Construction Equipment (CFC 3317):

1. Conditions of Use: Internal combustion powered construction equipment shall be used in accordance with all of the following conditions:

   a. Equipment shall be located so that exhausts do not discharge against combustible material.
   b. Exhausts shall be piped to the outside of the building.
   c. Equipment shall not be refueled while in operation.
   d. Fuel for equipment shall be stored in approved areas outside of the building.

PART 2 - PRODUCTS

2.1 TEMPORARY EQUIPMENT, GENERAL

A. Temporary Equipment: Temporary equipment shall comply with requirements of Division 01 Section “Temporary Facilities and Controls,” and shall comply with the requirements of this Section.

PART 3 - EXECUTION

A. Fire Safety Observation, Procedures, and Features: Provide fire safety observation activities, procedures, and features as required and in compliance with regulatory requirements.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Division 01 Section "Substitution Procedures" for requests for substitutions.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, which is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Products: Products of a listed manufacturer that are demonstrated to meet or exceed the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified ‘Basis of Design’ product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the

significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Division 01 Section "Submittal Procedures."

F. Substitution: Refer to Division 01 Section "Substitution Procedures" for definition and limitations on substitutions.

1.4 QUALITY ASSURANCE

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

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.

2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

   a. Name of product and manufacturer.
   b. Model and serial number.
   c. Capacity.
   d. Speed.
   e. Ratings.

3. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.5 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

B. Delivery and Handling:

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

C. Storage:

   1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
   2. Store products to allow for inspection and measurement of quantity or counting of units.
   3. Store materials in a manner that will not endanger Project structure.
   4. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.

5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

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

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

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

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.

   a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."

2. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.

   a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."

3. Basis-of-Design Products: Where Specifications indicate a manufacturer and product indicated by the phrase “Basis of Design,” provide the product indicated.

   a. Where specifications list manufacturers of comparable products subject to compliance with requirements, comparable products complying with properties and characteristics based on the named product may be provided by one of the other named manufacturers.
   b. Where specifications do not list additional manufacturers, other products may be considered for substitution subject to compliance with requirements in Division 01 Section 012500 "Substitution Procedures" and compliance with properties and characteristics based on the named product.

C. Sustainable Product Selection: Where Specifications require product to meet sustainable product characteristics, select products complying with indicated requirements. Comply with requirements in Division 01 sustainability requirements Section and individual Specification Sections.

1. Select products for which sustainable design documentation submittals are available from manufacturer.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable products when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. Samples, if requested.

B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."

1. Form of Approval of Submittal: As specified in Division 01 Section 013300 "Submittal Procedures."
2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 017300
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting, patching and repairing.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Protection of existing construction.
10. Repair of the Work.

B. Related Requirements:

1. Division 01 Section "Summary of Work" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.

1.3 DEFINITIONS

A. Accessible Route: A continuous unobstructed path connecting accessible elements and spaces of an accessible site, building or facility that can be negotiated by a person with a disability using a wheelchair, and that is also safe for and usable by persons with other disabilities. Interior accessible routes may include corridors, hallways, floors, ramps, elevators and lifts. Exterior accessible routes may include accessible parking stalls and access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.

B. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

C. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 SUBMITTALS

A. Surveys: Submit survey of accessible route improvements stamped and signed by land surveyor or professional engineer certifying that elevations and slopes of improvements comply with disabled access requirements.

1. Survey shall be a separate submittal and shall also be included in the Project Record Documents.

1.5 QUALITY ASSURANCE

A. Surveyor Qualifications: A professional engineer or land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting of structural elements must be performed, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

   a. Primary operational systems and equipment.
   b. Fire separation assemblies.
   c. Air or smoke barriers.
   d. Fire-suppression systems.
   e. Mechanical systems piping and ducts.
   f. Control systems.
   g. Communication systems.
   h. Fire-detection and alarm systems.
   i. Conveying systems.
   j. Electrical wiring systems.
   k. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

   a. Water, moisture, or vapor barriers.
   b. Membranes and flashings.
   c. Sprayed fire-resistive material.

d. Equipment supports.
e. Piping, ductwork, vessels, and equipment.

4. Visual Elements: Cut and patch construction in a manner that results in no visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in Division 02 trough 33 Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: 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 affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for plumbing, mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings. Verify service space requirements for equipment and operating items.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Request for Information."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately

located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

K. Repair or remove and replace damaged, defective, or nonconforming Work.

3.5 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."

F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required,

and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

G. Patching and Repairing: Patch and repair construction by grinding, filling, leveling, refinishing, closing up, and similar operations following performance of other work. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched and repaired areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 REPAIR OF THE WORK

A. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.9 PROTECTION AND REPAIR

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Comply with manufacturer's written instructions for temperature and relative humidity following installation.

D. Protection of Existing Items: Provide protection and ensure that existing items to remain are undisturbed by construction are maintained in condition that existed at commencement of the Work.

END OF SECTION

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous construction and demolition waste.
2. Recycling nonhazardous construction and demolition waste.
3. Disposing of nonhazardous construction and demolition waste.

B. Related Requirements:
1. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. CGBSC: California Green Building Standards Code.

B. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

C. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

D. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

E. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

F. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

G. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 MATERIALS OWNERSHIP

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

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit Waste Management Plan within 30 days of date established for the Notice to Proceed indicating method of compliance with the California Green Building Standards Code.

1.6 INFORMATIONAL SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use separate forms for construction waste and demolition waste. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Qualification Data: For waste management coordinator

1.7 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, or individual employee assigned by the General Contractor, with a record of successful waste management coordination of projects with similar requirements. Individual of firm, or Contractor's employee, shall be a LEED-Accredited Professional, certified by the USGBC, as waste management coordinator.

B. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.

C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 REGULATORY REQUIREMENTS

A. Construction Waste Management: Refer to CGBSC Section 5.408.1 Construction Waste Management. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with CGBSC Section 5.408.1.1, 5.408.1.2, or 5.408.1.3 (Below) or meet a local construction and demolition waste management ordinance, whichever is more stringent:

1. GBSC Section 5.408.1.1, Construction Waste Management Plan: Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, provide Waste Management Plan that:

    a. Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
    b. Determines if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
    c. Identifies diversion facilities where construction and demolition waste material collected will be taken.
    d. Specifies the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

2. GBSC Section 5.408.1.2, Waste Management Company: Utilize a waste management company that can provide verifiable documentation that the

percentage of construction and demolition waste material diverted from the landfill complies with CGBSC Section 5.408.1.

a. Exception 1: Excavated soil and land-clearing debris.
b. Exception 2: Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
c. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.

3. GBSC Section 5.408.1.3, Waste Stream Reduction Alternative: The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.

B. Documentation, CGBSC Section 5.408.1.4: Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1. through 5.408.1.3. The Waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management procedures. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management procedures during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Division 01 Section "Temporary Facilities and Controls."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management procedures to everyone concerned within three days of submittal return.
2. Distribute waste management procedures to entities when they first begin work on-site. Review procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. General: Contract Documents identify items to be salvaged for reinstallation and items to be salvaged to the Owner; items indicated to be removed become the Contractor's property, Contractor may salvage removed items and offer for sale and/or donation.

B. Salvaged Items for Reuse/Reinstallion in the Work: Salvage items for reuse and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

C. Salvaged Items to Owner: Salvage items for Owner's use and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

D. Salvaged Items for Sale and/or Donation: Not permitted on Project site.

E. Salvaged Items for Reinstallation or Owner's Use:

1. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
2. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
3. Plumbing Fixtures: Separate by type and size.
4. Lighting Fixtures: Separate lamps by type and protect from breakage.
5. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Receivers and Processors: Refer to local county websites for the county in which the Project is located for listings of available recycling receivers and processors, and materials accepted.

C. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

D. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

E. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

    a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

C. Metals: Separate metals by type.

D. Metal Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

E. Metal Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Wood Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

3.6 UNIVERSAL WASTE

A. Additions and alterations to a building shall require verification that Universal Waste items such as fluorescent lamps and mercury containing ballasts and thermostats as well as other California prohibited Universal waste materials are disposed of properly and are diverted from landfills.

1. Refer to Universal Waste Rule link at https://dtsc.ca.gov/universalwaste/.~~)~~

3.7 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final Completion procedures.
3. Final cleaning.
4. Repair of the Work.

B. Related Requirements:

1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Division 01 Section "Execution" for repair of the Work.
3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance documentation requirements.
4. Division 01 Section "Project Record Drawings" for preparing and submitting Project Record Drawings.
5. Division 01 Section "Warranties" for submitting final warranty information.
6. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
7. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 SUBMITTALS

A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

B. Contractor's List of Incomplete Items: Final submittal at Final Completion.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

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

B. Submittals Prior to Substantial Completion: Submit the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record drawings, operation and maintenance data, construction photographic documentation, warranties, and similar final record information.
3. Submit closeout submittals specified in individual Division 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance materials specified in individual Division 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
5. Submit testing, adjusting, and balancing records.
6. Submit sustainable design submittals not previously submitted.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
6. Advise Owner of changeover in utility services.
7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
8. Complete final cleaning requirements, including touchup painting.
9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection for Completion a minimum of 10 days prior to date the work will be completed and ready for inspection. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Following inspection, Architect will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected.

1. Architect’s Punch List: During inspection, Architect will prepare a list of items needing completion or correction (punch list), a copy of the punch list will be distributed to the Contractor and Owner.
2. Reinspection: Request reinspection when the Work identified in previous inspection as incomplete is completed or corrected.
3. Results of completed inspection will form the basis of requirements for final completion.

E. Contractor’s Cost for Reinspection: Architect will perform one inspection and one reinspection at no additional cost to the Contractor. The expense for the Architect’s time for additional inspections will be paid by the Owner with the amount being deducted from the Contract Sum. The expense will be based on an hourly rate in accordance with the Architect’s standard hourly rate schedule in effect at the time the work is performed with a minimum of $400.00 dollars for each additional reinspection.

1.6 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
2. List of Incomplete Items: Submit copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect; copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit Final Completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS

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

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect (Company name).
    d. Name of Contractor (Company Name).
    e. Page number.

4. Submit list of incomplete items in one of the following formats:

    a. MS Excel electronic file. Architect will return annotated file.
    b. PDF electronic file. Architect will return annotated file.

PART 2 - PRODUCTS

2.1 MATERIALS

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

1. Use cleaning products that comply with the California Green Building Standards Code maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for Completion for entire Project or for a designated portion of Project:

    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    g. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
    h. Vacuum and mop concrete.
    i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
    k. Remove labels that are not permanent.
    l. Wipe surfaces of mechanical, electrical, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
    q. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Division 01 Section 017300 “Execution” before requesting inspection for determination of Substantial Completion.

1. Comply with requirements of Division 02 through 33 Sections as applicable to the Work to be restored and/or repaired.

END OF SECTION

SECTION 017836
WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.

B. Related Sections include but are not limited to the following:

1. Division 01 Section "Closeout Procedures."
2. Division 01 Section "Operation and Maintenance Data."
3. Division 02 through 33 Sections for specific warranty requirements.

1.3 WARRANTY REQUIREMENTS

A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

B. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

C. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

D. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

E. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

F. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.4 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Warranty Submittal: Submit (2) paper copies and one electronic copy of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.

1. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by email to Architect.

D. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 017839
PROJECT RECORD DRAWINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Drawings:

B. Related Sections:

1. Division 01 Section "Use of Architect’s Electronic Files” for requirements related to use of Architect's digital data files.
2. Division 01 Section "Execution" for surveys of exterior accessible routes.
3. Division 01 Section "Closeout Procedures" for general closeout procedures.
4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 RECORD DRAWING SUBMITTAL

A. Closeout Submittal: Submit Record Drawings as follows:

1. Initial Submittal: Submit one paper-copy set of marked-up record prints.

   a. Architect will indicate whether record prints are acceptable or if additional information or documentation is needed, and will return the set to the Contractor.

2. Final Submittal:

   a. Paper Copy: Submit one paper-copy set of marked-up record prints that have been revised to address Architect’s comments from the initial submittal.
   b. Digital Data Files: Submit digital data files of Project Record Drawings as PDF files on a thumb-drive.

1.4 PROJECT RECORD DRAWINGS

A. Record Drawings: Maintain one set of paper copies of the Contract Drawings during the construction period for Project Record Drawing Purposes.

1. Project Record Drawing print sets shall include all drawings of the Contract Documents including original project Drawings, Shop Drawings, Supplemental Drawings, Coordination Drawings, Clarification Drawings, Change Orders, and similar drawings. Record Drawing set shall include all drawings of Contract Documents whether or not changes and additional information were recorded.
2. Store Project Record Drawings in the field office apart from the Contract Documents used for construction; do not use Project Record Drawings for construction purposes.
3. Maintain Record Drawings in good order and in a clean, dry, legible condition, protected from deterioration and loss.
4. Provide access to Project Record Drawings for Architect's reference during normal working hours.
5. Incorporate new and revised drawings into Project Record Drawings as modifications are issued; do not wait until the end of Project.
6. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an understandable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross-reference record prints to corresponding archive photographic documentation.

7. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations below first floor.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or Construction Change Directive.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

8. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
9. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
10. Mark important additional information that was either shown schematically or omitted from original Drawings.
11. Note Construction Change Directive numbers, Change Order numbers, and similar identification, where applicable.

B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

C. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, submit marked-up record prints to Architect, following Architect's review and action, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: PDF electronic file.
2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
3. Refer instances of uncertainty to Architect for resolution.
4. Architect will furnish Contractor one set of digital data files of the Contract Drawings in PDF format for use in recording information.

    a. Refer to Division 01 Section 011105 "Use of Architect's Electronic Files" for requirements related to use of Architect's digital data files.

D. Format:

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Digital Data Files:

    a. Format: Annotated PDF electronic file.
    b. Organize digital data information into separate electronic files corresponding with each building design discipline of the Contract Documents; name each file with the corresponding design discipline.

E. Identification: Include the following information on each Record Drawing:

1. "PROJECT RECORD DRAWING" designation located in a prominent location.
2. Project name if Project name is not included in a title block as part of the drawing.
3. Date.
4. Name of Architect if Architect's name is not included in a title block as part of the drawing.
5. Name of Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

TETER
ARCHITECTS ENGINEERS CONNECTED

Project Manual

Volume 02

Technical Specifications

for

Merced City Schol District (MCSD)

John C. Fremont Elementary School,

Herbert Hoover Middle School, &

John Muir Elementary School

Perimeter Fencing Projects

District Bid No.: 2025-3-A

John C. Fremont Elementary School		Herbert Hoover Middle School		John Muir Elementary School	
TETER Project No.:	24-13173.01	TETER Project No.:	24-13173.02	TETER Project No.:	25-13360
DSA File No.:	24-35	DSA File No.:	24-35	DSA File No.:	24-35
DSA Appl. No.:	02-123701	DSA Appl. No.:	02-123702	DSA Appl. No.:	02-123703
PTN No.:	65771-148	PTN No.:	65771-147	PTN No.:	65771-149

SECTION 000107.02
SEALS PAGE

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 02-123701 INC:

REVIEWED FOR

SS ☐ FLS ☑ ACS ☑

DATE: 10/14/2025

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SECTION 099100.02
PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation and field painting, staining or refinishing of the following:

1. Exposed exterior items and surfaces.
2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Related Sections include but are not limited to the following:

1. Division 32 Sections for additive alternate No. 1 for painting existing decorative meta lfencing

1.3 DEFINITIONS

A. Definitions of gloss levels below are from "MPI Architectural Painting Specification Manual" (hereafter, "MPI Manual").

1. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
2. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
3. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
4. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
5. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
6. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.

C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on 8 inch square samples of actual material to be painted or stained. For masonry surfaces, include a mortar joint.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

E. Coating Maintenance Manual: Submit with Closeout/Maintenance Submittals a Coating Maintenance manual; manual shall include a floor plan with rooms identified by name and number, a finish schedule coordinated with the floor plan, designations of where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F.

1. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
2. Keep storage area neat and orderly. Remove oily rags and waste daily.
3. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

A. Apply paints only when the temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Protection:

1. Cover or otherwise protect finished work of other trades, work not to be painted concurrently, landscaping, and adjacent property from damage.
2. When not in use, store paints in designated areas. Keep containers closed. At end of day's work, remove empty containers, paint soaked rags, and debris. Vent fumes. Take precautions to prevent fire.

D. Sequencing, Scheduling:

1. Coordinate removal and replacement of hardware, electrical fixtures and trim, and related work of other Sections.
2. Stain, prime, back paint, and pre-finish items before installation as required.

E. Cleaning and Disposal:

1. Do not use Project plumbing fixtures or piping systems for:

a. Cleaning painting equipment and utensils.
b. Disposal of waste from cleaning or disposal of paints.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Scheduled Paint Systems: Provide paint systems as scheduled on the Drawings and listed in Part 3 Article “Paint Systems” to comply with requirements in this Section.

1. Named Manufacturers' Products: Manufacturer and product designations indicated in the scheduled paint systems are for the purpose of establishing minimum requirements; unless otherwise indicated, paint products are based on products manufactured by the following:

a. Sherwin Williams Paints.

1) Subject to compliance with requirements, provide the named products or comparable products by one of the following:

a) Dunn-Edwards Paints.
b) Glidden Professional.
c) PPG Paints.
d) Tnemec.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. VOC Content: Paints and coatings applied at the Project site shall comply with VOC limits of authorities having jurisdiction; VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); and VOC limits of the California Green Building Standards Code (CGBSC), Section 5.504.4.3 and Table 504.4.3 as follows:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 100 g/L.
3. Nonflat High-Gloss Paints and Coatings: VOC not more than 150 g/L.
4. Dry-Fog Coatings: VOC not more than 150 g/L.
5. Floor Coatings: VOC not more than 100 g/L.
6. Pretreatment Wash Primers: VOC not more than 420 g/L.
7. Primers, Sealers, and Undercoaters: VOC not more than 100 g/L.
8. Rust Preventative Coatings Applied to Ferrous Metals: VOC not more than 250 g/L.
9. Shellacs, Clear: VOC not more than 730 g/L.
10. Shellacs, Pigmented: VOC not more than 550 g/L.
11. Stains: VOC not more than 250 g/L.
12. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
13. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
14. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Colors: Provide color selections made by the Architect. Colors shall be factory mixed and match approved samples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect of anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
2. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

D. Concrete and Masonry Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Perform appropriate tests to determine alkalinity and moisture content of surfaces; testing shall be performed or witnessed by a certified representative of the paint manufacturer. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

1. Cracks and defects at concrete and masonry surfaces shall be filled with cement grout; match surface texture.
2. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. Steel Structures Painting Council's (SSPC), SSPC-SP 3, "Power Tool Cleaning."

2. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Aluminum Substrates: Remove loose surface oxidation.

I. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual." Paint/stain exposed surfaces, except where schedules indicate that a surface or material is not to be painted/stained or is to remain natural. If schedules do not specifically mention an item or surface to be painted, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.

4. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
7. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
8. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
9. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

    a. Prefinished items include the following factory-finished components:

        1) Aluminum storefronts and entrances.
        2) Anodized aluminum gypsum board and plaster trim.
        3) Acoustical wall panels.
        4) Toilet and urinal partitions.
        5) Stainless steel items.
        6) Finished mechanical and electrical equipment.
        7) Light fixtures.
        8) Distribution cabinets.

    b. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

    1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
    2. Omit primer on metal surfaces that have been shop primed and touchup painted.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

F. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

G. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

I. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING AND PROTECTION

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. Correction of Defective Work:

1. Repair abraded, damaged or incomplete paint surfaces by methods acceptable to Architect. Spot repairs to be well-blended into adjacent work. For large repairs, re-coat entire plane or building element in which damaged area occurs.
2. Defaced surfaces of work not to be painted shall be cleaned and their original finish restored.

F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 PAINT SYSTEMS

A. Exterior Paint Systems:

SURFACE		PAINT SYSTEM		COATS	MANUFACTURER'S DESIGNATION	
(1)	Galv. Metal & Aluminum	P56.A	Gloss	First Coat Second Coat Third Coat	B66-310 A77 A77	ProCryl Primer Solo GL Solo GL
		P56.E	Semi Gloss	First Coat Second Coat Third Coat	B66-310 A76 A76	ProCryl Primer Solo S/G SoloS/G

END OF SECTION

SECTION 104116.02
EMERGENCY KEY CABINETS (KNOX BOX)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes emergency key cabinets (Knox Box).

1.3 SUBMITTALS

A. Product Data: For each type of product including installation instructions. Include roughing-in dimensions and details showing mounting method and relationships of box and trim to surrounding construction.

PART 2 - PRODUCTS

2.1 EMERGENCY KEY CABINETS

A. Emergency Key Cabinets, General: Emergency key cabinet for secure storage of keys for use by local police and fire departments. Emergency key cabinets shall be acceptable to local police and fire departments.

B. Basis of Design: Drawings and Specifications are based on the following:

1. Knox Company; 3200 Series Hinged Door Model Knox Box.

C. Emergency Key Cabinet Properties:

1. Mounting: Surface mounted.

2. Exterior Dimensions (Body): 4” high, by 5” wide, by 3-3/4” deep.
3. Lock: UL listed, double action rotating tumblers and hardened steel pins accessed by a biased cut key.
4. Body: 1/4 inch steel plate.
5. Door: 1/2 inch thick steel with interior gasket and stainless steel hinge.
6. Finish: Manufacturer’s standard proprietary finish, black.
7. Capacity: Holds up to 10 keys and access cards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls for suitable framing depth and blocking where emergency key cabinets will be installed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Location and Height: Install emergency key cabinets in locations and at mounting heights indicated, 6 ft high minimum mounting height unless restricted by local requirements; mounting locations and heights shall be acceptable to authorities having jurisdiction.

B. Installation: Install cabinets in accordance with cabinet manufacturer’s installation instructions appropriate for construction materials of project conditions. Installation shall be capable of resisting physical attack and preventing unwanted removal of cabinet.

3.3 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust cabinet doors to operate easily without binding. Verify that locking devices operate properly.

C. On completion of cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by cabinet manufacturers.

E. Replace cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 311000.02
SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Stripping topsoil.
4. Removing above and below-grade site improvements.
5. Disconnecting, capping or sealing, and removing site utilities.

B. Related Sections:

1. Division 01 Section “Construction Waste Management” for management of waste materials.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

1. Tree protection shall be defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Existing Conditions: Digital photographic documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged.

1. Salvage for Reinstallation: Clean and store on-site in a secure location, ready for reinstallation.
2. Salvage to Owner: Deliver to Owner’s designated location on-site.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Erosion and Sedimentation Control: Do not commence site clearing operations until temporary erosion and sedimentation control and plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

H. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

I. Landscape Protection and Repair Measures:

1. Existing turf, plat material or trees that are damaged due to construction activities, vehicular damage, stress due to lack of water or other deterioration of the existing areas to remain are to be restored by the contractor to the existing condition prior to the project at no additional cost to the district.

2. In disturbed areas contractor is to fill and grade low and depressed areas with clean topsoil. In shrub areas, after grading, contractor is to repair any damage and replace any damaged or stressed plat materials to match existing.

3. Contractor is responsible for seeding over trenches and all disturbed turf areas due to construction activities.

J. Irrigation Protection and Repair Measures:

1. All areas adjacent to the project areas have existing irrigation improvements to remain & protect. Contractor is to repair all damage to existing improvements and systems that are intended to remain to match existing improvements.

2. Damage may be direct or indirect result of contractor's work, or may be caused by neglect. Contractor to field verify existing conditions prior to commencing work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with requirements of referenced Geotechnical Report for site clearing operations.

B. Protect and maintain benchmarks and survey control points from disturbance during construction.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

D. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Identify trees to remain by wrapping a 1-inch blue vinyl tie tape flag around each tree trunk at 54 inches above the ground.

E. Protect trees, plant growth, and vegetation not specifically designated for removal.

F. Verify that existing plant life to be removed has been authorized for removal.

G. Examine site and compare individual work areas with the Drawings and Specifications.

H. Thoroughly investigate and verify conditions under which the work is to be performed.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES & IRRIGATION SYSTEMS

A. Utilities and Systems to Remain: Locate, identify, and protect utilities that are to remain from damage.

B. Interrupting Existing Utilities and Systems: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Utility and Systems Termination: Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with utility companies to shut off affected utilities and notify Owner not less than 48 hours in advance of utility termination.

1. Excavate for and remove underground utilities indicated to be removed.

3.4 CLEARING AND GRUBBING

A. Clear only limited areas required for execution of work at proposed improvement location.

B. Remove obstructions and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Use only hand methods for grubbing within protection zones.
3. Chip removed tree branches and dispose of off-site.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL EXCAVATION

A. Remove sod, grass, and similar vegetation before stripping topsoil.

B. Strip topsoil to depth of **4 inches** in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

3.6 REMOVAL OF SITE IMPROVEMENTS

A. Remove existing above and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated. Remove paving only where authorized and necessary to execute the Work.

1. Remove concrete slabs, paving, walks, gutters, and curbs to nearest existing joint locations. Neatly saw-cut joints before removing existing pavement, saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION

SECTION 312000.02
EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses, and plants.
3. Over excavation of building pad and pavement area.
4. Excavating soil and other material for surface improvements.
5. Placing fill.
6. Compaction of existing ground and fill.
7. Preparation of subgrade for other improvements.
8. Grading of soil.

B. Related Sections:

1. Division 31 Section “Site Clearing.”
2. Division 32 Section “Asphalt Paving”

1.3 REFERENCES

A. ASTM D 1557.

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

F. Fill: Soil material used to raise existing grades.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

H. Subgrade: Uppermost surface of an excavation.

I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

A. Material Test Reports: Classification according to ASTM D 2487 for each borrow soil material proposed for fill and backfill.

B. Chemical Test Report for Imported Fill: Chemical test report(s) as recommended by The Department of Toxic Substance Control (DTSC) guidelines for the testing of import soils for school sites.

1.6 QUALITY ASSURANCE

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

1.7 FIELD CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

B. Do not commence earth moving operations until temporary erosion and sedimentation control measures required by authorities having jurisdiction are in place.

C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

D. Do not commence earth moving operations until plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

1. Any borrow soil materials proposed to be brought on-site are subject to inspection and testing by Owner's geotechnical testing agency to verify they are in compliance with referenced standards. Owner shall determine if testing of materials is required prior to any material being brought onto the site. Testing of materials may take up to two weeks to verify compliance with standards.

B. Soil Types:

1. Soil Type S1: Excavated and re-used material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
2. Soil Type S2: Excavated and reused material, graded, free of roots, lumps greater than one inch, rocks larger than 1/2 inch, debris, weeds and foreign matter.
3. Soil Type S3: Imported topsoil, friable loam; reasonably free of roots, rocks larger than 1/2 inch, debris, weeds, and foreign matter.

C. Soil for Fills:

1. Fill in Turf or Planting Areas: Excavated soils that have been graded and cleansed of excessive organics, debris, rocks, and lumps.
2. Fill in Turf or Other Planting Areas: Type S2 or S3.
3. Fill in Non-planting Areas: Type S1 or S2.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contractor shall thoroughly examine the project site prior to submitting his bid to familiarize himself with the conditions of the site and the conditions in which he will be required to work.

B. Contractor shall thoroughly examine contract documents prior to bid.

1. Documents do not necessarily indicate a balanced site.
2. Contractor shall be responsible for importing materials from an off-site location or exporting excess material to an off-site location.

3.2 PREPARATION

A. Site clearing specified in Division 31 Section “Site Clearing” shall be performed prior to beginning earthwork.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations. Coordinate excavations near existing utilities with utility companies.

C. Protect and maintain erosion and sedimentation controls during earth moving operations.

D. Identify required lines, levels, contours and datum.

E. Locate, identify, and protect existing above and below grade utilities from damage.

F. Protect plant life, lawns, trees, shrubs, and other features not authorized for removal.

1. See Site Clearing Specifications for requirements for repairing damaged areas and plantings.

G. Employ equipment and methods appropriate to the work site.

H. Protect excavated areas from drainage inflow, and provide drainage to all excavated areas.

3.3 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

C. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.4 STORAGE OF SOIL MATERIALS

A. Stockpile excavated satisfactory soil and materials borrow soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Stockpile soil materials away from edge of excavations. Do not store within drip line of trees to remain.

3.5 EXCAVATION

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

B. Excavations at Edges of Tree and Plant-Protection Zones: Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots.

1. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Where authorized to cut roots, cut roots with a saw.

C. Excavation for Pavements and Flatwork: Following the stripping operations, the exposed surface in the area of proposed paved areas shall be over excavated to a minimum depth of **8 inches** below stripped ground surface or **6 inches** below the proposed pavement subgrade, whichever is deeper. Any areas encountered with debris fill in the subgrade of the over excavation shall be excavated an additional depth equal to the depth of the debris fill. The bottom of the over excavation shall be scarified to a depth of 6 inches, moisture conditioned to near optimum moisture content, and compacted as required under the “Compaction” Article.

3.6 FILLING, BACKFILLING, AND COMPACTING

A. After excavation and just prior to filling, the bottom of excavations shall be scarified to a depth of **6 inches**, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to a minimum of **95 percent** of maximum density based on ASTM Method D 1557.

B. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

C. Fills shall be placed in lifts approximately **6 inches** thick, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to values indicated.

D. Place soil fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

E. Compact soil materials to not less than the following percentages of maximum dry unit weight according ASTM D 1557:

1. Under structures, building slabs, steps, and pavements: **95 percent**.
2. Under walkways: **92 percent**.
3. Under turf or unpaved areas: **90 percent**.

3.7 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated on Drawings.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1/2 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.8 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the Drawings and Specifications.
2. To facilitate testing and inspection, the Contractor shall:

a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
b. Provide access to the Work for the designated Testing and Inspection Agency.
c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage of test specimens on the project site.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Testing and Inspection Services:

1. Testing and inspections shall be performed by the designated Testing and Inspection Agency.

2. Testing and inspections shall be in accordance with the 2019 California Building Code, Section 1705A.6 and Table 1705A.6, DSA Testing and Inspections form DSA 103, and Structural Drawings Special Inspection Criteria.

E. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

F. Compaction testing will be performed in accordance with ASTM D 1557-78 (Method A).

G. If tests indicate work does not meet specified requirements, recompact, or remove and replace, and retest.

3.9 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.10 CLEANING AND DISPOSAL OF SURPLUS MATERIALS

A. Rake Clean.

B. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

C. Adjacent roadways shall be kept clean during the progress of this work.

END OF SECTION

SECTION 321313.02
CONCRETE PAVING AND WALKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. SSCDOT – Standard Specifications, State of California, Department of Transportation (Caltrans) latest edition, except references to method of payment, and references to any state furnished materials.

1.2 SUMMARY

A. Section Includes: Concrete for the following:

1. Driveways.
2. Parking lots.
3. Curbs, gutters, walks and pedestrian paving.
4. Fence Post Footings.
5. Concrete Reinforcement.

B. Related Sections:

1. Division 31 Section “Earthwork.”
2. Division 32 Section “Paving Specialties” for pavement markings, wheel stops, detectable warning surfaces, and site signage.

1.3 DEFINITIONS

A. Cementitious Materials: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” portland cement.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Material Test Reports: For each of the following:

1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

D. Delivery Tags: Delivery tags for all concrete.

1.5 QUALITY ASSURANCE

A. All improvements within property owned by a City, County, or State Entity shall be in accordance with the Standards and Specifications of the authority having jurisdiction.

B. Installer Qualifications: A qualified installer who employs on Project personnel who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills required for work performed under this Section. In actual installation of the work of this Section, use adequate numbers of skilled workmen to insure installation in strict accordance with the contract documents design.

C. Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
2. ACI 318-14, “Building Code Requirements for Structural Concrete” with amendments per 2019 California Building Code, Chapter 19A, Section 1905A.
3. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 ACCESSIBILITY REQUIREMENTS FOR PEDESTRIAN PAVING

A. Concrete paving for accessible pedestrian routes for persons with disabilities shall comply with the following per 2019 California Building Code (CBC) requirements:

1. Changes in Level: 1/4 inch maximum vertical change in level; changes greater than 1/4 inch to not more than 1/2 inch shall be beveled with a slope not exceeding 1:2 vertical to horizontal; offsets exceeding 1/2 inch shall be by a ramp (CBC 11B-303).
2. Cross Slope of Walks and Ramps: 1/4:12 maximum (CBC 11B-403.3).
3. Slope of Pedestrian Pavements: 1/4:12 maximum in any direction where there is no defined direction of travel (CBC 11B-403.3).
4. Slope of Door and Ramp Landings: 1/4:12 maximum in any direction (CBC 11B-404.2.4.4 and 11B-405.7.1). Changes in level are not permitted within door and ramp landings.

5. Slope of Parking Stalls and Access Aisles for Persons with Disabilities: 1/4:12 maximum in any direction (CBC 11B-502.4). Changes in level are not permitted within accessible parking stalls and access aisles.
6. Slope of walks in the direction of travel: 1:20 (5%) maximum (CBC 11B-403.3).
7. Slope of Ramps in the Direction of Travel: 1:12 (8.33%) maximum (CBC 11B-405.2).
8. With of Walks and Ramps: 48 inches minimum clear width (CBC 11B-403.5.1 and 11B-405.5).

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from steel wire into flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” Portland Cement.

B. Normal-Weight Aggregates: ASTM C 33, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

2.4 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

B. Water: Potable.

C. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating. It shall be the Contractor’s responsibility to verify that all curing compounds used comply with the VOC Emission requirements of the San Joaquin Valley Air Pollution Control District.

2.5 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.6 CONCRETE MIXTURES

A. General: Concrete mixtures shall comply with requirements of authorities having jurisdiction.

B. Mixtures for concrete pavements, gutters and curbs subject to vehicular traffic:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

   a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

C. Mixtures for concrete walks, gutters and curbs subject to only pedestrian traffic:

1. Concrete shall be Class 3 (Previous years denoted as Class B) and shall contain 505 pounds minimum (5 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications unless noted otherwise on the drawings.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 2500 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.58.
c. Slump Limit: 5 inches maximum.

D. Mixtures for fence post footings:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

E. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and base surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared base surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Division 31 Section "Earth Moving."

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, 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.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

   1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

   1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
   2. Provide tie bars at sides of paving strips where indicated.
   3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys as shown on the Drawings.
   4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips where noted on the Drawings.

   1. Extend joint fillers full width and depth of joint.
   2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
   3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   5. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

   1. Grooved Joints: Form 1/4-inch wide contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius unless noted otherwise on the drawings. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.

      a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.

   2. Sawed Joints: Sawed joints shall not be used where concrete is permanently exposed to view.

a. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

1) Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius unless noted otherwise on the Drawings. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. 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.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement and dowels.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 CONCRETE FINISHING

A. Float Finish: After initial floating during placement, begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
2. Ramps: Finish ramps with medium broom finish with direction perpendicular to the direction of travel.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, no minus.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width for Grooved Joints: Plus 1/8 inch, no minus.

B. Comply with tolerances per CBC Chapter 11B for accessible routes for persons with disabilities. Refer to regulatory requirements referenced in Part 1 Article “Accessibility Requirements for Pedestrian Paving” of this specification section.

3.10 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the concrete construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the drawings and specifications.
2. To facilitate testing and inspection, the Contractor shall:

    a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
    b. Provide access to the Work for the designated Testing and Inspection Agency.
    c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
    d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hr. as required by ASTM C31.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

E. Strength of each concrete mixture will be satisfactory if the average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

F. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

H. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, compressive strengths, or other requirements have not been met, as directed by Architect.

I. Concrete will be considered defective if it does not pass tests and inspections.

J. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

K. Test and inspection reports are to be prepared and distributed by the testing agency.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Additional construction, testing, and replacement costs resulting from damaged or improperly installed infrastructure shall be paid for by the Contractor.

C. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

D. Protect concrete paving 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.

E. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 323113.02
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences and associated fence framing.
2. Swinging service gates.
3. Privacy slats.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, gate hardware, and finishes for chain-link fences and gates.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Accessible Pedestrian Gates: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, ICC/ANSI A117.1, and the accessibility requirements of Chapter 11B of the California Building Code.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 2 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

B. No-Climb Fence Fabric: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 1 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

2.3 TENSION WIRE

A. Polymer-Coated Tension Wire: 0.177-inch diameter, marcelled steel tension wire complying with ASTM A 817 and ASTM A 824; ASTM F668, Class 2b, over zinc-coated steel wire.

1. Color: Black

2.4 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and swing gate types.

1. Gate Height: Match fence height.
2. Gate Finish: Polymer coating to match Fence Framing.

    a. Color: Black.

3. Gate Leaf Width: As indicated on Drawings.

    a. Pedestrian gates shall provide not less than 32 inches in clear width with the gate in a 90 degree open position; gate leaf width shall not exceed 48 inches.

b. Service Gates: Width as indicated on Drawings.
c. Fire department vehicle access gates shall provide not less than 20 feet in clear width with the gates in a 90 degree open position.

B. Gate Framing: Steel pipe matching fence framing and as follows:

1. Gate leaf width up to 6 feet: Perimeter and intermediate framing of 1.90 inches outside diameter, 2.72 plf.
2. Gate leaf width over 6 feet to 12 feet: Perimeter framing of 2.375 inches outside diameter, 3.65 plf., and intermediate framing and bracing of 1.90 inches outside diameter, 2.72 plf.

C. Gate Construction:

1. Joints and Connections: Weld all joints and connections.
2. Bracing: Provide adjustable truss rod bracing for all gates and between intermediate framing members for gate leaves over 8 feet in width.
3. Intermediate Framing: Provide intermediate vertical framing for gates exceeding 8 feet in width; equally space intermediate framing and space not more than 8 feet on center; weld connections.
4. Kick Plates for Accessible Pedestrian Gates: Provide 1/8 inch thick by 10 inch high galvanized steel plates at the bottom of each side of gates to provide a smooth and unobstructed surface for persons in a wheel chair. Kick plates shall be without sharp edges or corners. Plates shall not interfere with the ability to adjust truss rod bracing.

D. Gate Hardware: See Specification Section 323123.

2.5 FITTINGS

A. Fittings, General: Comply with ASTM F 626.

B. Post Caps: Caps shall be weatherproof to prevent moisture intrusion into posts. Provide line post caps with loop to receive top rail; provide post cap for each post.

C. Rail and Brace Ends: Designed to provide secure connection of top rails to terminal post and brace or other rails to terminal and intermediate posts; provide for each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate rails in the fence line-to-line posts.

E. Tension and Brace Bands: Pressed steel for posts up to 4 inches in outside diameter.

F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment; 5/16 inch minimum rod diameter.

H. Tie-Wire: Standard round wire ties for attaching chain-link fabric to posts, rails, and frames; hot-dip galvanized steel, 0.148-inch (9 gage) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Hog Rings: Round wire ties for attaching chain-link fabric to bottom tension wire; 0.12-inch diameter of same material and finish as fabric wire.

J. Finish: Polymer-coated per ASTM F668, Class 2b, over zinc-coated steel wire matching coating thickness of chain-link fence fabric

2.6 PRIVACY SLATS

A. Fiber-Glass-Reinforced Plastic Slats: UV-light-stabilized fiber-glass-reinforced plastic, not less than 0.06 inch thick, sized to fit mesh specified for direction indicated.

B. Color: Black

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.

1. Install fencing at locations indicated on Drawings; for fencing located at property lines, install fencing inside property line.

3.3 CHAIN-LINK FABRIC INSTALLATION

A. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch bottom clearance between finish grade or surface and bottom selvage unless otherwise

indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

B. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

1. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

C. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing. Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

D. Fasten fabric to bottom tension wire with 0.120 inch diameter hog rings spaced a maximum of 24 inches o.c.

E. Privacy Slats: Install slats in vertical direction, securely lock in place.

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.5 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 323119.02
DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Decorative metal picket fencing.
2. Decorative metal rolling gates.
3. Decorative metal swinging service gates.
4. Decorative metal swinging accessible pedestrian gates.

B. Related Requirements:

1. Division 03 Section “Cast-in-Place Concrete” for concrete for setting fence posts.
2. Division 05 Section "Metal Fabrications" for metal fabrications not included in this section.
3. Division 32 Section “Gate Hardware” for gate hardware.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including finishing materials.

B. Shop Drawings: Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the professional engineer responsible for their preparation; professional engineer shall be a civil or structural engineer licensed in the State of California.

C. Sample Warranty.

D. Maintenance Data.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing decorative metal fencing and gates similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Installer Qualifications: Fabricator of products.

C. Powder-Coating Applicator Qualifications: A firm experienced in successfully applying powder coatings of type indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

D. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store decorative metal fencing and gates in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

B. Deliver components so as not to be damaged or deformed. Package fence and gate panels for protection during transportation and handling. Store components in accordance with manufacturer’s written recommendations.

C. Unload, store, and erect fence and gate panels in a manner to prevent bending, warping, twisting, and surface damage.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with decorative metal fencing and gates by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION

A. Coordinate installation of anchorages for Work of this Section. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of decorative metal fence assemblies that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures.
   b. Deterioration of metals and/or finishes beyond normal weathering including cracking, peeling, blistering, and corroding.

2. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the door to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

   a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

   b. Division of the State Architect.

2.2 MANUFACTURERS

A. Basis of Design Manufacturer: Where named manufacturer products are indication, Design, Drawings, and Specifications are based on products manufactured by the following:

1. Merchants Metals

a. Subject to compliance with requirements, provide products indicated or comparable products by one of the following:

1) Ameristar
2) Master Halco

B. Source Limitations: Obtain decorative metal fencing through one source from a single manufacturer.

2.3 DECORATIVE METAL FENCING

A. Basis of Design: Drawings and Specifications are based on the following:

1. Merchants Metals (www. merchantsmetals.com),

a. Secure-Weld Plus series,
b. Monroe panel design, 2 rail (1 top, 1 bottom)

B. Decorative Metal Fencing, General: Fabricate decorative metal fencing from galvanized steel bars and shapes of sizes and profiles indicated.

C. Fence Height: As indicated on Drawings.

D. Posts, Rails, and Pickets: Square steel tube sections complying with ASTM F2408 with galvanized exterior zinc coating and as follows:

1. Posts: Posts having a minimum yield strength of 45,000 psi and a minimum size as follows:

a. Posts for Fences: Size as indicated on Drawings, not less than 4 inches square x 1/8 inch thickness.

1) Spacing: Nominal 8 feet on center maximum; posts shall be equally spaced on a standard module.

b. Posts for Swing Gates: Size as indicated on Drawings, not less than the following:

1) Gates to 48 inches Wide: 4 inches square x 1/4 inch wall thickness.
2) Gates over 48 inches Wide to 96 inches Wide: 4 inches square x 1/4 inch thickness.
3) Gates over 96 inches wide to 144 inches Wide: 6 inches square x 3/8 inch thickness.

2. Horizontal Rails: Not less than 2 inches square x 11 gage (0.120 inch).

3. Pickets: Not less than 1 inch square x 14 gage (0.080 inch).

a. Spacing: 4-3/4” inches on center nominal; pickets shall be spaced such that a 4 inch diameter sphere shall not be capable of passing through the opening.

E. Color: Black.

F. Fence Accessories:

1. Post Caps: Manufacturer's standard flat top of formed steel, cast aluminum, or malleable iron formed to provide a weather tight closure.
2. Picket Tops: None required; picket tops to be left open.
3. Rail/Post Brackets: Manufacturer's standard steel brackets allowing field installation of fence panels without welding.

2.4 SWING GATES

A. Swing Gates: Swing gates matching fence system fabricated from galvanized square tubular steel members manufactured per ASTM F2408, having minimum yield strength of 45,000 psi. with G90 (0.9 oz/sf) zinc coating and as follows:

1. Height: Match fence framing.
2. Frame Members: Not less than 2 inches square x 10 gage (0.125 inch).
3. Pickets: Match fence pickets.

B. Swing Gate Hardware: Gate hardware shall be per Specification Section 323123.

1. Gate hardware for pedestrian access gates shall comply with accessibility requirements noted in Part 2 Article "Performance Requirements."
2. Stop/Holder: Each gate shall have a stop/holder to allow the gate to be held in an open position.

C. Accessory Materials:

1. Expanded Metal: 16 gauge galvanized expanded metal, 1/2 inch diamond mesh.

2.5 FASTENERS

A. General: Provide tamper-resistant fasteners for exposed conditions unless otherwise indicated. Fasteners shall be of the following materials:

1. Uncoated Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed, Type 304 stainless-steel fasteners where exposed.
2. Galvanized Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
3. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Fastener Materials: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating or Type 304 stainless steel.

C. Fasteners for Anchoring to Other Construction: Unless otherwise indicated, select fasteners of type, grade, and class required to produce connections suitable for anchoring indicated items to other types of construction indicated.

D. Post-Installed Anchors: Mechanical fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.

1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.6 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.7 SETTING MATERIALS

A. Cementitious Material: Portland cement, ASTM C 150, Type II, gray.

1. See specification Section 321313.

2.8 FABRICATION, GENERAL

A. General: Fence sections and gates shall be factory fabricated to prevent the need for field welding or cutting. Components of fabricated items shall not be finished until after fabrication.

B. Pickets: Pickets shall be welded to horizontal rails.

C. Swing Gates: Fabricate gates to match fences and as indicated on Drawings. Horizontal and vertical members of gate frames shall be welded to form a rigid one-piece unit.

1. Gates for pedestrian access shall comply with disabled access requirements noted in Part 2 Article “Performance Requirements.”
2. Where exit devices are indicated for gate operating hardware, maintain security by providing a barrier to prevent reaching through the gate and operating the exit device.

D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

E. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.

F. Provide necessary brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as needed to receive finish hardware, screws, and similar items unless otherwise indicated.

G. Connect members with full-penetration welds unless otherwise indicated. Use welding method that is appropriate for metal and finish indicated and that develops full strength of members joined. Finish exposed welds and surfaces smooth, flush, and blended to match adjoining surfaces.

2.9 STEEL AND IRON FINISHES

A. Manufactured Finishes: Manufacturer's standard electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash, followed by an application of an epoxy primer followed by an acrylic topcoat and oven curing of each coat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils. The coated panels and posts shall meet or exceed the performance criteria of ASTM F2408.

   a. Color: Black.

B. Galvanizing: Hot-dip galvanize products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M. Galvanize items after fabrication.

   1. Hot-dip galvanize steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
   2. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
   3. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. Powder-Coat Finish for Galvanized Metal: Prepare, treat, and coat galvanized metal to comply with resin manufacturer's written instructions and as follows:

   1. Prepare galvanized metal by thoroughly removing grease, dirt, oil, flux, and other foreign matter.
   2. Treat prepared metal with zinc-phosphate pretreatment, rinse, and seal surfaces.
   3. Apply thermosetting polyester or acrylic urethane powder coating with cured-film thickness not less than 2 mils.
   4. Color: Black.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal fences and gates.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install fencing and gates in accordance with manufacturer's written installation instructions, shop drawings, and as indicated on Drawings.

B. Provide anchorage devices and fasteners where needed to secure Work to in-place construction.

C. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

D. Set posts accurately in location, alignment, and elevation; measured from established lines and levels.

1. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil. Footings shall have a diameter not less than 4 times the width of posts and shall extend 6 inches below the bottom of the post.
2. Post Setting: Set posts in concrete into firm, undisturbed soil. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices. Crown top of exposed concrete to drain water away from posts. Protect aboveground portion of posts from concrete splatter.

E. Perform cutting, drilling, and fitting required to install decorative metal fencing. Set products accurately in location, alignment, and elevation, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

F. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of decorative metal, restore finishes to eliminate evidence of such corrective work.

G. Install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.

H. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

3.3 ADJUSTING

A. Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction,

throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

3.4 CLEANING AND PROTECTION

A. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Specification Section 099100 " Painting".

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

E. Replace fence components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

F. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 323123.02
GATE HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Commercial hardware for swinging decorative metal gates.
2. Testing of gates with panic hardware as required by NFPA 101.

B. Related Sections include but are not limited to the following:

1. Division 32 Section "Decorative Metal Fences and Gates."

1.3 REFERENCES AND ABBREVIATIONS

A. Industry standard references and abbreviations shall be as follows:

1. ADA: Americans with Disabilities Act (ADA), 2010 ADA Standards for Accessible Design.
2. BHMA: Builders' Hardware Manufacturers Association.
3. CCR: California Code of Regulations, Title 24, Part 2, California Building Code.
4. DHI: Door and Hardware Institute.
5. UL - Underwriters Laboratories.

    a. UL 305: Panic Hardware.

6. WHI: Warnock Hersey Incorporated.
7. SDI: Steel Door Institute.
8. NAAMM: National Association of Architectural Metal Manufacturers.

1.4 SUBSTITUTIONS

A. Substitutions: Substitutions will only be allowed by substitution requests submitted in accordance with Division 01 Section “Substitution Procedures” prior to the bid date.

1. In Part 2 Articles where manufacturers are listed for various product types and only one manufacturer is listed with no alternate manufacturers indicated, manufacturer listed is an established Owner standard and substitutions will not be allowed.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of hardware, as well as installation procedures and diagrams. Coordinate final hardware schedule with gates and related work to ensure proper size, thickness, hand, function, and finish of hardware. Coordinate submission of hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule. Organize schedule into “Hardware Sets” with index of gates, indicating complete designations of every item required for each opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
2. Name, part number and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set coordinated with site plan.
5. Explanation of all abbreviations, symbols and codes contained in schedule.
6. Mounting locations for hardware.
7. Gate sizes and materials.
8. List of manufacturers used and their nearest representative with address and phone number.
9. Keying information.
10. Manufacturer’s catalog cut sheets.

C. Maintenance Data: For each type of hardware to include in maintenance manuals. Include “as installed” final hardware and keying schedule.

D. As-Built Schedule: As-built/as-installed schedule with closeout documents, including keying schedule, manufacturers’ installation, adjustment and maintenance information, and supplier’s final inspection report.

E. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in the installation of hardware with five years documented experience.

B. Supplier Qualifications: A recognized architectural door hardware supplier with warehousing facilities in the Project's vicinity that has a record of successful in-service performance for supplying door hardware that is similar in quantity, type, and quality to that specified for this Project, and who employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1.7 DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery of packaged hardware items to the appropriate locations for installation.

B. Hardware items shall be individually packaged in manufacturers' original containers, complete with proper fasteners. Clearly mark packages on outside to indicate contents and locations in work.

C. Deliver permanent keys and cores directly from lock manufacturer to Owner's designated representative by secured delivery.

1.8 COORDINATION

A. Installation Templates: Distribute for gates, frames, posts and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Keying: Coordinate keying, and access control with Owner's lock hardware staff and/or consultant.

C. Review, compare, and coordinate hardware with gates for non-compatible mounting and/or operating conditions; notify Architect in writing of any conflicts.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures including excessive deflection, cracking, or breakage.
   b. Faulty operation of operators and hardware.
   c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Established from date of Substantial Completion as follows:

   a. Locksets: Three (3) years
   b. All other hardware: Two (2) years.

1.10 MAINTENANCE

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

B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of hardware Installer. Include preventive

maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND REGULATORY REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the gate to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

    a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

2.2 GATE HARDWARE

A. Gate Hardware: Gate hardware; provide hardware for each gate to comply with requirements in this Section.

1. Hardware is based on products by the manufacturers listed below for various hardware types indicated.

HARDWARE TYPE	BASIS OF DESIGN MANUFACTURER	MANUFACTURERS OF COMPARABLE PRODUCTS
Hinges		
Barrel Hinges		
Gate Closers	Locinox	
Lock and Latch sets, Cylinders, and Key System	Schlage	
Exit Devices	Von Duprin	

B. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

C. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.

2.3 GATE HARDWARE PRODUCTS

A. General: Gate hardware products shall comply with preceding "Performance and Regulatory Requirements" Article.

B. Hinges: Roller bearing hinges, weld-on.

1. Size: 3-1/4" x 3-1/2".
2. Material: Steel, primed for painting.
3. Flat (face) mount, 180-deg opening angle.
4. Weight rating: 1,000 lb/pair
5. Zerk type grease fitting.

C. Barrel Hinges: weld-on barrel hinges with round barrel body.

1. Size: 5" high, 1-3/4" wide.
2. Barrel: 1"
3. Weld Plates: 2" high, 1" wide, 3/8" thick
4. Stainless steel hinge pin.
5. Zerk type grease fitting.

D. Gate Closers: Combination heavy-duty gate closer and hinge set.

1. Basis of Design Manufacturer & Product:

a. Locinox, MAMMOTH-HD-9005 (Black).

E. Lock and Latch Sets: Cylindrical latch/lock sets with lever handled trim and as follows:

1. Lever Handles: Comply with requirements of SFM Standard 12-10-2, Section 12-10-202 contained in the CCR, Title 24, part 12, California Referenced Standards Code.
2. Breakaway Exterior Levers: Gates shall be provided with independent security breakaway levers, breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
3. Cylindrical Locksets: Extra Heavy Duty and as follows:

   a. Chassis: Cylindrical design; corrosion-resistant plated cold-rolled steel, through-bolted.
   b. Locking Spindle: Stainless steel, integrated spring and spindle design.
   c. Latch Retractors: Forged steel; balance of inner parts corrosion-resistant plated steel or stainless steel.
   d. Latchbolt: Solid steel.

e. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 2 inch clearance from lever mid-point to gate face.
f. Strikes: 16 gage curved steel with 1 inch deep box construction and lips of sufficient length to clear trim and protect clothing.
g. Certifications:

1) ANSI A156.2, 1994, Series 4000, Grade 1.
2) UL listed for A label and lesser class single gates up to 4ft x 8ft.

4. Basis of Design Manufacturer & Product:

a. Schlage ND82 with VandalGuard, RHO trim, 622 finish (Black).

F. Exit Devices: Surface mounted rim type exit devices.

1. Certifiable by independent testing laboratory that device has completed over 1,000,000 cycles and can still meet ANSI/BHMA A156.3 - 1994 standards.
2. Handing: Non-handed basic device design with center case interchangeable with all functions.
3. Fluid Damper Return: Devices shall have quiet return fluid dampeners.
4. Latchbolts: Latchbolts shall be deadlocking with ¾” throw and have a self-lubricating coating to reduce friction and wear.
5. Outside Trim: Where operating levers are provided, provide manufacturer’s standard “breakaway” feature for lever trim.
6. Strikes: All surface strikes shall be roller type and utilize a plate underneath to prevent movement.
7. Fasteners: Exit Devices to be sex-bolted through gates.

8. Basis of Design Manufacturer & Product:

a. Von Durpin, OUT-LD-99L-NL-693

G. Lock Protectors: Fabricated from steel, welded to gate frame or fence post, finish to match gate frame or fence post.

2.4 LOCK CYLINDERS

A. Review and confirm lock cylinder requirements with Owner.

B. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

2.5 KEYING

A. Review and confirm keying requirements and key system with Owner.

B. Existing System: Confirm lock cylinders and keying with Owner and provide system as directed by the Owner.

C. Key Blanks: Standard "6" pin bow key blank; tag to identify.

2.6 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

   1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of hardware unless otherwise indicated.

   1. Concealed Fasteners: For hardware units that are exposed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the hardware.
   2. Screws for strikes, face plates and similar items shall be flat head, countersunk type machine screws.
   3. All exit devices and lock protectors shall be fastened to the gate by the means of sex bolts or through bolts.

2.7 FINISHES

A. Provide finishes as described in the description for each product. If no finish is provided, acceptable finishes are as follows:

   1. Painted or powder coated to match gate and fence finish.
   2. Plated Steel and Brass: Satin chromium US26D (626) unless otherwise noted.
   3. Stainless Steel: Satin stainless steel US32D (630) unless otherwise noted.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine gates and frames, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that gates and frames are square and plumb and ready to receive work and dimensions are as instructed by the manufacturer.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

A. Install each hardware item to comply with manufacturer's written instructions.

B. Use the templates provided by hardware item manufacturer.

C. Mounting Heights: Mount hardware units at heights to comply with Performance and Regulatory Requirements Article and as follows:

1. Standard Hardware: ANSI/SDI A250.8.
2. Operating hardware shall be located between 34 and 44 inches above the floor to comply with requirements of the California Building Code and the 2010 ADA Standards for Accessible Design.

D. Hinges: Install types and in quantities required for each gate location and type, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of gate height, whichever is more stringent.

E. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.3 ADJUSTING

A. Initial Adjustment: Approximately 2 weeks prior to completion or occupancy, check each operating item of hardware for each gate to ensure proper operation or function; adjust operational hardware as needed for proper operation. Replace units that cannot be adjusted to operate as intended. Adjust gate control devices to compensate for final operation and to comply with referenced accessibility requirements.

3.4 FIELD QUALITY CONTROL

A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.

B. Egress Hardware Inspections: Inspect each gate equipped with panic hardware in accordance with NFPA 101, Section 7.2.1.15.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired assembly installations comply with specified requirements.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surface soiled by hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION AND TRAINING

A. Instruct Owner's Personnel to adjust, operate, and maintain hardware and hardware finishes during the final adjustment of hardware.

END OF SECTION

TETER
ARCHITECTS ENGINEERS CONNECTED

Project Manual

Volume 03

Technical Specifications

for

Merced City Schol District (MCSD)

John C. Fremont Elementary School,

Herbert Hoover Middle School, &

John Muir Elementary School

Perimeter Fencing Projects

District Bid No.: 2025-3-A

John C. Fremont Elementary School		Herbert Hoover Middle School		John Muir Elementary School	
TETER Project No.:	24-13173.01	TETER Project No.:	24-13173.02	TETER Project No.:	25-13360
DSA File No.:	24-35	DSA File No.:	24-35	DSA File No.:	24-35
DSA Appl. No.:	02-123701	DSA Appl. No.:	02-123702	DSA Appl. No.:	02-123703
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SECTION 000107.03
SEALS PAGE

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 02-123702 INC:

REVIEWED FOR

SS ☐ FLS ☑ ACS ☑

DATE: 10/14/2025

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END OF SECTION

SECTION 099100.03
PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation and field painting, staining or refinishing of the following:

1. Exposed exterior items and surfaces.
2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Related Sections include but are not limited to the following:

1. Division 32 Sections for additive alternate No. 1 for painting existing decorative meta lfencing

1.3 DEFINITIONS

A. Definitions of gloss levels below are from "MPI Architectural Painting Specification Manual" (hereafter, "MPI Manual").

1. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
2. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
3. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
4. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
5. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
6. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.

C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on 8 inch square samples of actual material to be painted or stained. For masonry surfaces, include a mortar joint.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

E. Coating Maintenance Manual: Submit with Closeout/Maintenance Submittals a Coating Maintenance manual; manual shall include a floor plan with rooms identified by name and number, a finish schedule coordinated with the floor plan, designations of where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F.

1. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
2. Keep storage area neat and orderly. Remove oily rags and waste daily.
3. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

A. Apply paints only when the temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Protection:

1. Cover or otherwise protect finished work of other trades, work not to be painted concurrently, landscaping, and adjacent property from damage.
2. When not in use, store paints in designated areas. Keep containers closed. At end of day's work, remove empty containers, paint soaked rags, and debris. Vent fumes. Take precautions to prevent fire.

D. Sequencing, Scheduling:

1. Coordinate removal and replacement of hardware, electrical fixtures and trim, and related work of other Sections.
2. Stain, prime, back paint, and pre-finish items before installation as required.

E. Cleaning and Disposal:

1. Do not use Project plumbing fixtures or piping systems for:

a. Cleaning painting equipment and utensils.
b. Disposal of waste from cleaning or disposal of paints.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Scheduled Paint Systems: Provide paint systems as scheduled on the Drawings and listed in Part 3 Article “Paint Systems” to comply with requirements in this Section.

1. Named Manufacturers' Products: Manufacturer and product designations indicated in the scheduled paint systems are for the purpose of establishing minimum requirements; unless otherwise indicated, paint products are based on products manufactured by the following:

a. Sherwin Williams Paints.

1) Subject to compliance with requirements, provide the named products or comparable products by one of the following:

a) Dunn-Edwards Paints.
b) Glidden Professional.
c) PPG Paints.
d) Tnemec.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. VOC Content: Paints and coatings applied at the Project site shall comply with VOC limits of authorities having jurisdiction; VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); and VOC limits of the California Green Building Standards Code (CGBSC), Section 5.504.4.3 and Table 504.4.3 as follows:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 100 g/L.
3. Nonflat High-Gloss Paints and Coatings: VOC not more than 150 g/L.
4. Dry-Fog Coatings: VOC not more than 150 g/L.
5. Floor Coatings: VOC not more than 100 g/L.
6. Pretreatment Wash Primers: VOC not more than 420 g/L.
7. Primers, Sealers, and Undercoaters: VOC not more than 100 g/L.
8. Rust Preventative Coatings Applied to Ferrous Metals: VOC not more than 250 g/L.
9. Shellacs, Clear: VOC not more than 730 g/L.
10. Shellacs, Pigmented: VOC not more than 550 g/L.
11. Stains: VOC not more than 250 g/L.
12. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
13. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
14. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Colors: Provide color selections made by the Architect. Colors shall be factory mixed and match approved samples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect of anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
2. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

D. Concrete and Masonry Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Perform appropriate tests to determine alkalinity and moisture content of surfaces; testing shall be performed or witnessed by a certified representative of the paint manufacturer. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

1. Cracks and defects at concrete and masonry surfaces shall be filled with cement grout; match surface texture.
2. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. Steel Structures Painting Council's (SSPC), SSPC-SP 3, "Power Tool Cleaning."

2. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Aluminum Substrates: Remove loose surface oxidation.

I. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual." Paint/stain exposed surfaces, except where schedules indicate that a surface or material is not to be painted/stained or is to remain natural. If schedules do not specifically mention an item or surface to be painted, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.

4. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
7. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
8. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
9. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

    a. Prefinished items include the following factory-finished components:

        1) Aluminum storefronts and entrances.
        2) Anodized aluminum gypsum board and plaster trim.
        3) Acoustical wall panels.
        4) Toilet and urinal partitions.
        5) Stainless steel items.
        6) Finished mechanical and electrical equipment.
        7) Light fixtures.
        8) Distribution cabinets.

    b. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

    1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
    2. Omit primer on metal surfaces that have been shop primed and touchup painted.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

F. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

G. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

I. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING AND PROTECTION

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. Correction of Defective Work:

1. Repair abraded, damaged or incomplete paint surfaces by methods acceptable to Architect. Spot repairs to be well-blended into adjacent work. For large repairs, re-coat entire plane or building element in which damaged area occurs.
2. Defaced surfaces of work not to be painted shall be cleaned and their original finish restored.

F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 PAINT SYSTEMS

A. Exterior Paint Systems:

SURFACE		PAINT SYSTEM		COATS	MANUFACTURER'S DESIGNATION	
(1)	Galv. Metal & Aluminum	P56.A	Gloss	First Coat Second Coat Third Coat	B66-310 A77 A77	ProCryl Primer Solo GL Solo GL
		P56.E	Semi Gloss	First Coat Second Coat Third Coat	B66-310 A76 A76	ProCryl Primer Solo S/G SoloS/G

END OF SECTION

SECTION 104116.03
EMERGENCY KEY CABINETS (KNOX BOX)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes emergency key cabinets (Knox Box).

1.3 SUBMITTALS

A. Product Data: For each type of product including installation instructions. Include roughing-in dimensions and details showing mounting method and relationships of box and trim to surrounding construction.

PART 2 - PRODUCTS

2.1 EMERGENCY KEY CABINETS

A. Emergency Key Cabinets, General: Emergency key cabinet for secure storage of keys for use by local police and fire departments. Emergency key cabinets shall be acceptable to local police and fire departments.

B. Basis of Design: Drawings and Specifications are based on the following:

1. Knox Company; 3200 Series Hinged Door Model Knox Box.

C. Emergency Key Cabinet Properties:

1. Mounting: Surface mounted.

2. Exterior Dimensions (Body): 4” high, by 5” wide, by 3-3/4” deep.
3. Lock: UL listed, double action rotating tumblers and hardened steel pins accessed by a biased cut key.
4. Body: 1/4 inch steel plate.
5. Door: 1/2 inch thick steel with interior gasket and stainless steel hinge.
6. Finish: Manufacturer’s standard proprietary finish, black.
7. Capacity: Holds up to 10 keys and access cards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls for suitable framing depth and blocking where emergency key cabinets will be installed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Location and Height: Install emergency key cabinets in locations and at mounting heights indicated, 6 ft high minimum mounting height unless restricted by local requirements; mounting locations and heights shall be acceptable to authorities having jurisdiction.

B. Installation: Install cabinets in accordance with cabinet manufacturer’s installation instructions appropriate for construction materials of project conditions. Installation shall be capable of resisting physical attack and preventing unwanted removal of cabinet.

3.3 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust cabinet doors to operate easily without binding. Verify that locking devices operate properly.

C. On completion of cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by cabinet manufacturers.

E. Replace cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 311000.03
SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Stripping topsoil.
4. Removing above and below-grade site improvements.
5. Disconnecting, capping or sealing, and removing site utilities.

B. Related Sections:

1. Division 01 Section “Construction Waste Management” for management of waste materials.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

1. Tree protection shall be defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Existing Conditions: Digital photographic documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged.

1. Salvage for Reinstallation: Clean and store on-site in a secure location, ready for reinstallation.
2. Salvage to Owner: Deliver to Owner’s designated location on-site.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Erosion and Sedimentation Control: Do not commence site clearing operations until temporary erosion and sedimentation control and plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

H. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

I. Landscape Protection and Repair Measures:

1. Existing turf, plat material or trees that are damaged due to construction activities, vehicular damage, stress due to lack of water or other deterioration of the existing areas to remain are to be restored by the contractor to the existing condition prior to the project at no additional cost to the district.

2. In disturbed areas contractor is to fill and grade low and depressed areas with clean topsoil. In shrub areas, after grading, contractor is to repair any damage and replace any damaged or stressed plat materials to match existing.

3. Contractor is responsible for seeding over trenches and all disturbed turf areas due to construction activities.

J. Irrigation Protection and Repair Measures:

1. All areas adjacent to the project areas have existing irrigation improvements to remain & protect. Contractor is to repair all damage to existing improvements and systems that are intended to remain to match existing improvements.

2. Damage may be direct or indirect result of contractor's work, or may be caused by neglect. Contractor to field verify existing conditions prior to commencing work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with requirements of referenced Geotechnical Report for site clearing operations.

B. Protect and maintain benchmarks and survey control points from disturbance during construction.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

D. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Identify trees to remain by wrapping a 1-inch blue vinyl tie tape flag around each tree trunk at 54 inches above the ground.

E. Protect trees, plant growth, and vegetation not specifically designated for removal.

F. Verify that existing plant life to be removed has been authorized for removal.

G. Examine site and compare individual work areas with the Drawings and Specifications.

H. Thoroughly investigate and verify conditions under which the work is to be performed.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES & IRRIGATION SYSTEMS

A. Utilities and Systems to Remain: Locate, identify, and protect utilities that are to remain from damage.

B. Interrupting Existing Utilities and Systems: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Utility and Systems Termination: Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with utility companies to shut off affected utilities and notify Owner not less than 48 hours in advance of utility termination.

1. Excavate for and remove underground utilities indicated to be removed.

3.4 CLEARING AND GRUBBING

A. Clear only limited areas required for execution of work at proposed improvement location.

B. Remove obstructions and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Use only hand methods for grubbing within protection zones.
3. Chip removed tree branches and dispose of off-site.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL EXCAVATION

A. Remove sod, grass, and similar vegetation before stripping topsoil.

B. Strip topsoil to depth of **4 inches** in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

3.6 REMOVAL OF SITE IMPROVEMENTS

A. Remove existing above and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated. Remove paving only where authorized and necessary to execute the Work.

1. Remove concrete slabs, paving, walks, gutters, and curbs to nearest existing joint locations. Neatly saw-cut joints before removing existing pavement, saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION

SECTION 312000.03
EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses, and plants.
3. Over excavation of building pad and pavement area.
4. Excavating soil and other material for surface improvements.
5. Placing fill.
6. Compaction of existing ground and fill.
7. Preparation of subgrade for other improvements.
8. Grading of soil.

B. Related Sections:

1. Division 31 Section “Site Clearing.”
2. Division 32 Section “Asphalt Paving”

1.3 REFERENCES

A. ASTM D 1557.

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

F. Fill: Soil material used to raise existing grades.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

H. Subgrade: Uppermost surface of an excavation.

I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

A. Material Test Reports: Classification according to ASTM D 2487 for each borrow soil material proposed for fill and backfill.

B. Chemical Test Report for Imported Fill: Chemical test report(s) as recommended by The Department of Toxic Substance Control (DTSC) guidelines for the testing of import soils for school sites.

1.6 QUALITY ASSURANCE

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

1.7 FIELD CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

B. Do not commence earth moving operations until temporary erosion and sedimentation control measures required by authorities having jurisdiction are in place.

C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

D. Do not commence earth moving operations until plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

1. Any borrow soil materials proposed to be brought on-site are subject to inspection and testing by Owner's geotechnical testing agency to verify they are in compliance with referenced standards. Owner shall determine if testing of materials is required prior to any material being brought onto the site. Testing of materials may take up to two weeks to verify compliance with standards.

B. Soil Types:

1. Soil Type S1: Excavated and re-used material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
2. Soil Type S2: Excavated and reused material, graded, free of roots, lumps greater than one inch, rocks larger than 1/2 inch, debris, weeds and foreign matter.
3. Soil Type S3: Imported topsoil, friable loam; reasonably free of roots, rocks larger than 1/2 inch, debris, weeds, and foreign matter.

C. Soil for Fills:

1. Fill in Turf or Planting Areas: Excavated soils that have been graded and cleansed of excessive organics, debris, rocks, and lumps.
2. Fill in Turf or Other Planting Areas: Type S2 or S3.
3. Fill in Non-planting Areas: Type S1 or S2.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contractor shall thoroughly examine the project site prior to submitting his bid to familiarize himself with the conditions of the site and the conditions in which he will be required to work.

B. Contractor shall thoroughly examine contract documents prior to bid.

1. Documents do not necessarily indicate a balanced site.
2. Contractor shall be responsible for importing materials from an off-site location or exporting excess material to an off-site location.

3.2 PREPARATION

A. Site clearing specified in Division 31 Section “Site Clearing” shall be performed prior to beginning earthwork.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations. Coordinate excavations near existing utilities with utility companies.

C. Protect and maintain erosion and sedimentation controls during earth moving operations.

D. Identify required lines, levels, contours and datum.

E. Locate, identify, and protect existing above and below grade utilities from damage.

F. Protect plant life, lawns, trees, shrubs, and other features not authorized for removal.

1. See Site Clearing Specifications for requirements for repairing damaged areas and plantings.

G. Employ equipment and methods appropriate to the work site.

H. Protect excavated areas from drainage inflow, and provide drainage to all excavated areas.

3.3 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

C. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.4 STORAGE OF SOIL MATERIALS

A. Stockpile excavated satisfactory soil and materials borrow soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Stockpile soil materials away from edge of excavations. Do not store within drip line of trees to remain.

3.5 EXCAVATION

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

B. Excavations at Edges of Tree and Plant-Protection Zones: Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots.

1. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Where authorized to cut roots, cut roots with a saw.

C. Excavation for Pavements and Flatwork: Following the stripping operations, the exposed surface in the area of proposed paved areas shall be over excavated to a minimum depth of **8 inches** below stripped ground surface or **6 inches** below the proposed pavement subgrade, whichever is deeper. Any areas encountered with debris fill in the subgrade of the over excavation shall be excavated an additional depth equal to the depth of the debris fill. The bottom of the over excavation shall be scarified to a depth of 6 inches, moisture conditioned to near optimum moisture content, and compacted as required under the “Compaction” Article.

3.6 FILLING, BACKFILLING, AND COMPACTING

A. After excavation and just prior to filling, the bottom of excavations shall be scarified to a depth of **6 inches**, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to a minimum of **95 percent** of maximum density based on ASTM Method D 1557.

B. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

C. Fills shall be placed in lifts approximately **6 inches** thick, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to values indicated.

D. Place soil fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

E. Compact soil materials to not less than the following percentages of maximum dry unit weight according ASTM D 1557:

1. Under structures, building slabs, steps, and pavements: **95 percent**.
2. Under walkways: **92 percent**.
3. Under turf or unpaved areas: **90 percent**.

3.7 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated on Drawings.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1/2 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.8 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the Drawings and Specifications.
2. To facilitate testing and inspection, the Contractor shall:

a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
b. Provide access to the Work for the designated Testing and Inspection Agency.
c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage of test specimens on the project site.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Testing and Inspection Services:

1. Testing and inspections shall be performed by the designated Testing and Inspection Agency.

2. Testing and inspections shall be in accordance with the 2019 California Building Code, Section 1705A.6 and Table 1705A.6, DSA Testing and Inspections form DSA 103, and Structural Drawings Special Inspection Criteria.

E. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

F. Compaction testing will be performed in accordance with ASTM D 1557-78 (Method A).

G. If tests indicate work does not meet specified requirements, recompact, or remove and replace, and retest.

3.9 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.10 CLEANING AND DISPOSAL OF SURPLUS MATERIALS

A. Rake Clean.

B. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

C. Adjacent roadways shall be kept clean during the progress of this work.

END OF SECTION

SECTION 321216.03
ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. SSCDOT – Standard Specifications, State of California, Department of Transportation (Caltrans) latest edition, except references to method of payment, and references to any state furnished materials.

1.2 SUMMARY

A. Section Includes:

1. Hot-mix asphalt patching.
2. Hot-mix asphalt paving.
3. Aggregate base course.
4. Soil sterilant and treatment

B. Related Sections:

1. Division 31 Section "Earthwork."
2. Division 32 Section “Paving Specialties” for pavement markings, wheel stops, and site signage.

1.3 DEFINITION

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
2. Job-Mix Designs: For each job mix proposed for the Work.

B. Material Certificates: For each paving material, from manufacturer.

C. Material Test Reports: For each paving material.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the California Department of Transportation.

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Section 39 of the Caltrans Specifications.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

C. All improvements within property owned by a City, County, or State Entity shall be in accordance with the Standards and Specifications of the authority having jurisdiction.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 50 deg F.
2. Tack Coat: Minimum surface temperature of 50 deg F.
3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
4. Asphalt Base Course: Minimum surface temperature of 50 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 50 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. Aggregates: The grading and proportioning of aggregates shall be such that the combined mineral aggregate conforms to the specified requirements. All aggregates shall be clean and free from decomposed materials, organic materials, and other deleterious substances.

1. Aggregates for base course shall conform to Section 26 of the State Standard Specifications, Class 2 for 3/4 inch maximum size gradation.
2. Aggregates for asphaltic concrete shall conform to Type B as outlined in Section 39 of the State Standard Specifications. Aggregate grading shall be 3/4 inch maximum, medium for 1-1/2 inches or greater in total new pavement thickness.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: PG 64-10 in accordance with Section 92 of the Caltrans Specifications.

B. Asphalt Cement: ASTM D 946 for penetration-graded material.

C. Prime Coat: Asphalt emulsion prime coat complying with Section 93 of the Caltrans Specifications. Prime coat is not required unless specifically noted on the Drawings.

D. Tack Coat: Asphaltic emulsion for use as tack coat shall be of the penetration type conforming to the requirements of Section 94 of the Caltrans Specifications.

E. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Herbicide/Soil Sterilant: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form. Herbicide/soil sterilant shall comply with current EPA regulations at time of application.

1. Product: Dow AgroSciences; Treflan Weed and Grass Preventer, or approved equal.

B. Sand: ASTM D 1073, Grade Nos. 2 or 3.

C. Joint Sealant: ASTM D 6690, Type I, hot-applied, single-component, polymer-modified bituminous sealant.

2.4 MIXES

A. Hot-Mix Asphalt: Asphalt concrete shall be Type B and shall conform to the provisions of Section 39 of the Caltrans Specifications. The asphalt binder shall be steam refined paving asphalt classified as PG 64-10 in accordance with Section 92 of the Caltrans Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Owner's Inspection Agency shall verify that subgrade is stable and in suitable condition to begin paving.

B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. Subgrade preparation shall be as specified in Division 31 Section "Earthwork."

B. Prior to construction of base course and asphaltic concrete, clean previously constructed subgrade or subbase of all foreign substances. The surfaces shall be inspected for the specified compaction and trueness to line and grade.

C. Base Course: Aggregate base shall be placed in accordance with requirements of Section 26 of the State Standard Specifications and to the thickness shown. The materials shall be graded and compacted in maximum 4-inch layers to at least 95 percent of maximum density (ASTM D 1557).

1. The base course shall be maintained until the asphaltic pavement is in place. Maintenance shall include drainage, rolling, shaping, and watering as necessary to maintain the course in proper condition. Sufficient moisture shall be maintained at the surface to prevent a dusty condition by light sprinkling with water. Areas of completed base course that are damaged by freezing shall be conditioned, reshaped and recompacted in accordance with the requirements of this specification, without additional cost to the Owner.

D. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared base course is ready to receive paving.

E. Herbicide/Soil Sterilant Treatment: Apply herbicide/soil sterilant solution over surface to receive pavement or surfacing prior to the start of pavement or surfacing installation.

1. Thoroughly water soak surface to be treated, avoid excess water runoff.
2. Apply in spray form according to manufacturer's written application instructions at rates recommended manufacturer and in compliance with the State of California.
3. Limit application to areas immediately under areas to be paved, use shields or other means to protect adjacent areas. Do not apply under windy conditions.

F. Prime Coat: Prime Coat is only required if indicated on Drawings. It shall be the Contractor’s option to apply Prime Coat if not indicated on the Drawings. Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

G. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd. Tack coat will not be required over surfaces of existing pavement unless indicated on the Drawings. Where indicated it shall be applied uniformly to existing pavement surfaces at a rate of 0.05 to 0.15 gal./sq. yd.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.3 HOT-MIX ASPHALT SPREADING, LAYING, AND COMPACTING

A. Spreading and laying operations shall conform to the requirements of Sections 39-5 and 39-6 of the Caltrans Specifications. Where the total depth of paving exceeds 0.20 feet, the top layer of asphalt concrete shall not exceed 0.20 feet in compacted thickness. The aggregate for this layer and all lower layers shall be 3/4" maximum aggregate (medium). The next lower layer shall not exceed 0.25 feet in compacted thickness. Any lower layers shall not exceed 0.25 feet in compacted thickness. For total asphalt concrete thickness of 3 inches or greater, the minimum layer thicknesses shall be 1.5 inches compacted. Total asphalt concrete thicknesses of 3 inches may be placed in one layer at Contractor's option. No asphalt concrete paving shall be placed when the atmospheric temperature is below 50 degrees Fahrenheit. Compaction operations shall conform to the requirements of Section 39-6.03 of the Caltrans Specifications.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

   1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

D. All utility boxes and/or manholes shall be set flush with finished grade after placing final lift of asphalt paving, unless noted otherwise.

3.4 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:

   1. Base Course: Plus or minus 1/2 inch.
   2. Surface Course: Plus 1/2 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

   1. Base Course: 1/4 inch.
   2. Surface Course: 1/4 inch.
   3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.5 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd. .

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.6 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Owner shall engage a qualified testing agency to perform tests and inspections. Agency shall be qualified according to ASTM D 3666 for testing indicated.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979.

1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

    a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.
    b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements. Additional construction, testing, and replacement costs resulting from damaged or improperly installed infrastructure shall be paid for by the Contractor.

3.8 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow milled materials to accumulate on-site.

END OF SECTION

SECTION 321313.03
CONCRETE PAVING AND WALKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. SSCDOT – Standard Specifications, State of California, Department of Transportation (Caltrans) latest edition, except references to method of payment, and references to any state furnished materials.

1.2 SUMMARY

A. Section Includes: Concrete for the following:

1. Driveways.
2. Parking lots.
3. Curbs, gutters, walks and pedestrian paving.
4. Fence Post Footings.
5. Concrete Reinforcement.

B. Related Sections:

1. Division 31 Section “Earthwork.”
2. Division 32 Section “Paving Specialties” for pavement markings, wheel stops, detectable warning surfaces, and site signage.

1.3 DEFINITIONS

A. Cementitious Materials: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” portland cement.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Material Test Reports: For each of the following:

1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

D. Delivery Tags: Delivery tags for all concrete.

1.5 QUALITY ASSURANCE

A. All improvements within property owned by a City, County, or State Entity shall be in accordance with the Standards and Specifications of the authority having jurisdiction.

B. Installer Qualifications: A qualified installer who employs on Project personnel who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills required for work performed under this Section. In actual installation of the work of this Section, use adequate numbers of skilled workmen to insure installation in strict accordance with the contract documents design.

C. Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
2. ACI 318-14, “Building Code Requirements for Structural Concrete” with amendments per 2019 California Building Code, Chapter 19A, Section 1905A.
3. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 ACCESSIBILITY REQUIREMENTS FOR PEDESTRIAN PAVING

A. Concrete paving for accessible pedestrian routes for persons with disabilities shall comply with the following per 2019 California Building Code (CBC) requirements:

1. Changes in Level: 1/4 inch maximum vertical change in level; changes greater than 1/4 inch to not more than 1/2 inch shall be beveled with a slope not exceeding 1:2 vertical to horizontal; offsets exceeding 1/2 inch shall be by a ramp (CBC 11B-303).
2. Cross Slope of Walks and Ramps: 1/4:12 maximum (CBC 11B-403.3).
3. Slope of Pedestrian Pavements: 1/4:12 maximum in any direction where there is no defined direction of travel (CBC 11B-403.3).
4. Slope of Door and Ramp Landings: 1/4:12 maximum in any direction (CBC 11B-404.2.4.4 and 11B-405.7.1). Changes in level are not permitted within door and ramp landings.

5. Slope of Parking Stalls and Access Aisles for Persons with Disabilities: 1/4:12 maximum in any direction (CBC 11B-502.4). Changes in level are not permitted within accessible parking stalls and access aisles.
6. Slope of walks in the direction of travel: 1:20 (5%) maximum (CBC 11B-403.3).
7. Slope of Ramps in the Direction of Travel: 1:12 (8.33%) maximum (CBC 11B-405.2).
8. With of Walks and Ramps: 48 inches minimum clear width (CBC 11B-403.5.1 and 11B-405.5).

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from steel wire into flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” Portland Cement.

B. Normal-Weight Aggregates: ASTM C 33, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

2.4 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

B. Water: Potable.

C. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating. It shall be the Contractor’s responsibility to verify that all curing compounds used comply with the VOC Emission requirements of the San Joaquin Valley Air Pollution Control District.

2.5 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.6 CONCRETE MIXTURES

A. General: Concrete mixtures shall comply with requirements of authorities having jurisdiction.

B. Mixtures for concrete pavements, gutters and curbs subject to vehicular traffic:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

   a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

C. Mixtures for concrete walks, gutters and curbs subject to only pedestrian traffic:

1. Concrete shall be Class 3 (Previous years denoted as Class B) and shall contain 505 pounds minimum (5 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications unless noted otherwise on the drawings.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 2500 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.58.
c. Slump Limit: 5 inches maximum.

D. Mixtures for fence post footings:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

E. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and base surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared base surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Division 31 Section "Earth Moving."

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, 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.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

   1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

   1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
   2. Provide tie bars at sides of paving strips where indicated.
   3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys as shown on the Drawings.
   4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips where noted on the Drawings.

   1. Extend joint fillers full width and depth of joint.
   2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
   3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   5. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

   1. Grooved Joints: Form 1/4-inch wide contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius unless noted otherwise on the drawings. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.

      a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.

   2. Sawed Joints: Sawed joints shall not be used where concrete is permanently exposed to view.

a. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

1) Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius unless noted otherwise on the Drawings. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. 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.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement and dowels.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 CONCRETE FINISHING

A. Float Finish: After initial floating during placement, begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
2. Ramps: Finish ramps with medium broom finish with direction perpendicular to the direction of travel.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, no minus.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width for Grooved Joints: Plus 1/8 inch, no minus.

B. Comply with tolerances per CBC Chapter 11B for accessible routes for persons with disabilities. Refer to regulatory requirements referenced in Part 1 Article “Accessibility Requirements for Pedestrian Paving” of this specification section.

3.10 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the concrete construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the drawings and specifications.
2. To facilitate testing and inspection, the Contractor shall:

    a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
    b. Provide access to the Work for the designated Testing and Inspection Agency.
    c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
    d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hr. as required by ASTM C31.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

E. Strength of each concrete mixture will be satisfactory if the average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

F. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

H. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, compressive strengths, or other requirements have not been met, as directed by Architect.

I. Concrete will be considered defective if it does not pass tests and inspections.

J. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

K. Test and inspection reports are to be prepared and distributed by the testing agency.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Additional construction, testing, and replacement costs resulting from damaged or improperly installed infrastructure shall be paid for by the Contractor.

C. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

D. Protect concrete paving 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.

E. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 321700.03
PAVING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Detectable warning surfaces.
2. Traffic and pedestrian signage.

B. Related Sections:

1. Division 32 Sections as applicable to asphalt paving, concrete paving and concrete walks.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

A. Shop Drawings: For the following:

1. Pavement Markings: Indicate pavement markings, colors, lane separations, parking spaces, directional arrows, and accessibility markings.
2. Detectable Warning Surfaces: Indicate locations and extent of detectable warning surfaces.

B. Qualification Data: For installer of detectable warning surfaces.

1.4 QUALITY ASSURANCE

A. Installer Qualifications, Detectable Warning Surfaces: Installer shall be certified in writing by the detectable warning surface manufacturer as having successfully completed manufacturer's training for installation of units required for this Project.

B. Regulatory Requirements: The following shall comply with requirements of the 2010 ADA Standards for Accessible Design and the California Building Code, Chapter 11B.

1. Detectable warning surfaces.
2. Pavement markings for disabled access parking stalls and access aisles.
3. Signage for disabled access relating to parking stalls, parking lots, and accessible path of travel to building entrances including vertical clearance below post mounted signs located adjacent to walking surfaces.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.6 PROJECT CONDITIONS

A. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 DETECTABLE WARNING SURFACES

A. Basis of Design: Drawings and Specifications are based on the following:

1. ADA Solutions, Inc.

   a. Replaceable Wet-Set detectable warning tile panels.
   b. Surface Mount detectable warning tile panels.

2. Subject to compliance with requirements, provide product indicated or a comparable product subject to request for substitution.

B. Description: Homogeneous fiberglass and carbon reinforced composite panels with ADA and CBC compliant truncated dome pattern on exposed surfaces, panels are colorfast and UV stable with uniform color throughout the thickness of the panel.

1. Surface Mount Detectable Warning Tile Panels: Tile panels designed for surface application on existing concrete with mechanical and adhesive fastening.
2. Standard Sizes: 24 by 36, 48, and 60 inches; 36 by 36 and 60 inches.
3. Thickness:

   a. Surface Mount Tiles: 3/16 inch thick with 1/2 inch wide beveled edge at all edges.

4. Physical Characteristics:

    a. Compressive Strength: 28,900 psi, ASTM D695.
    b. Slip Resistance: 1.18 dry, 1.05 wet, ASTM C 1028.
    c. Flame Spread Index: Less than 25, ASTM E 84.
    d. Freeze/Thaw/Heat: No disintegration, ASTM C 1026.

5. Dome Size and Configuration: Comply with CBC 11B-705:

    a. Dome Size:

        1) Base Diameter: 0.90 inches minimum, 0.92 inches maximum.
        2) Top Diameter: 0.45 inches minimum, 0.47 inches maximum.
        3) Height: 0.2 inches.

    b. Dome Configuration and Spacing: Square grid, 2.3 inches minimum, 2.4 inches maximum, center to center spacing. Base edge to base edge spacing of 0.65 inch minimum measured to the most adjacent domes on a square grid.

6. Color: Yellow and approximate 33538 of SAE AMSSTD-595A.

C. Accessory Materials: Accessory materials shall be recommended in writing by the detectable surface panel manufacturer.

1. Fasteners for Surface Mounted Tile: Manufacturer's standard stainless steel sleeve anchors, 1/4 inch diameter.
2. Adhesive/Sealant for Surface Mounted Tile: Solvent free polyether adhesive/sealant, ASTM C 920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A & O.

    a. Acceptable Product: ChemLink, Inc.; M-1 Structural Adhesive/Sealant

2.2 TRAFFIC AND PEDESTRIAN SIGNAGE

A. Traffic Signs: Provide traffic signs as indicated on Drawings complying with the following requirements:

1. Material: Aluminum sheet, ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32, 0.080 inch minimum thickness.
2. Corner Condition: Rounded to radius of 1-1/2 inches unless otherwise indicated.
3. Finish: 3M Engineer Grade Reflective Sheeting, ASTM D 4956, Type I.
4. Size: As indicated on Drawings.
5. Color: As indicated on Drawings.
6. Text and Graphics: As indicated on Drawings.

B. Brackets: Extruded aluminum brackets and fittings to suit sign construction and mounting conditions for bracket-mounted signs.

C. Fasteners: Non-corrosive fasteners compatible with sign and post materials; provide fasteners with vandal/theft resistant heads.

D. Sign Posts: Galvanized steel pipe, ASTM A53, standard weight, Schedule 40, size as indicated on Drawings.

E. Concrete for Sign Posts: Ready mixed concrete or prepackaged concrete mix for site mixing requiring only the addition of water at the project site; minimum 2000 psi compressive strength at 28 days.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions in which products are to be applied or installed with installer/applicator present.

B. Proceed with only after unsatisfactory conditions have been corrected.

3.2 DETECTABLE WARNING SURFACE INSTALLATION

A. General: Install detectable warning surface tile panels in accordance with manufacturer's written installation instructions.

B. Surface Mounted Tile Panels: Install panels using adhesive and mechanical fasteners. Provide 1/8 inch space between adjacent panels of multiple panel installations.

1. Clean existing concrete surface of debris, oil, and grease.
2. Lay out panels and confirm fit and panel location.
3. Apply adhesive as follows using care in applying adhesive so that excessive amounts of adhesive will not be squeezed out from underneath panels.

    a. Panels for Curb Ramps: Apply a 3/8 inch bead of adhesive to the flat framework on the bottom of panels.
    b. Panels for Other Locations: Apply full adhesive coverage to the bottom of the panel using a 3/16 by 3/16 inch or 1/4 by 1/4 inch square notch trowel.

4. Drill concrete through preformed fastener locations in the panel and install fasteners. If additional fastener locations are required, drill and install fasteners in accordance with manufacturer's written instructions.
5. Seal perimeter panel edges after anchoring panels. Remove protective films and clean panels of concrete dust from drilling prior to sealing perimeters of panels.

3.3 SIGNAGE INSTALLATION

A. Sign Post Installation:

1. Post Excavation and Footings: Drill or hand-excavate holes for posts to diameters and depths indicated in firm, undisturbed soil; if footing diameters and depths are not indicated on Drawings, footings shall be not less than 10 inches diameter by 30 inches deep; tops of footings shall be established as 4 inches below finish grade.
2. Post Setting: Verify that posts are set plumb, aligned, and at correct height; hold in position during setting with concrete or mechanical devices; the bottom of posts shall be 3 inches above the bottom of footings. Place concrete around posts and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

    a. Posts in Paved Areas Installed Prior to Paving: Comply with the following:

        1) Posts in Concrete Paved Areas and Curbs: Coordinate top of paving elevation and pour concrete fill to approximately 6 inches below finish grade.
        2) Posts in Asphalt Concrete Paved areas: Concrete fill to be flush with adjacent paving and crowned to shed water away from posts. Coordinate top of paving elevation and form top 6 inches of footing with round concrete form of diameter matching post footing; pour concrete fill prior to paving operations.

    b. Posts in Unpaved Areas: Concrete fill to be 2 inches above finish grade and crowned to shed water away from posts. Coordinate finish grade elevation and form top 6 inches of footing with round concrete form of diameter matching post footing.

B. Sign Installation: Attach signs to posts with appropriate brackets and theft resistant fasteners.

1. The bottom of signs shall be at least 80 inches above walking surfaces when located adjacent to pedestrian paths of travel.
2. Peen ends of exposed threads to prevent removal of fasteners.
3. Where signs are indicated to be fastened to buildings or fences, install as indicated on Drawings.

END OF SECTION

SECTION 323113.03
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences and associated fence framing.
2. Swinging service gates.
3. Privacy slats.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, gate hardware, and finishes for chain-link fences and gates.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Accessible Pedestrian Gates: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, ICC/ANSI A117.1, and the accessibility requirements of Chapter 11B of the California Building Code.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 2 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

B. No-Climb Fence Fabric: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 1 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

2.3 FENCE FRAMEWORK

A. Posts and Rails: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 or ASTM F1083 based on the following:

1. Fence Height: As indicated on Drawings.
2. Heavy industrial strength round steel pipe, material Group IA, schedule 40, galvanized; pipe coated inside and outside by hot-dipped method, 1.8 oz. per square foot of outside and inside surfaces; provide members with minimum dimensions and wall thickness according to ASTM F 1083 based on the following:

    a. Line Posts:

        1) Fence height to 6 feet: 1.9 inches outside diameter, 2.72 plf.
        2) Fence height over 6 feet to 8 feet: 2.375 inches outside diameter, 3.65 plf.

    b. End, Corner and Pull Posts:

        1) Fence height to 6 feet: 2.375 inches outside diameter, 3.65 plf.

2) Fence height over 6 feet to 8 feet: 2.875 inches outside diameter, 5.79 plf.

c. Gate Posts: Posts for individual gate leaf widths as follows:

1) Gate leaf width to 6 feet: 2.875 inches outside diameter, 5.79 plf.
2) Gate leaf width over 6 feet to 12 feet: 4.0 inch outside diameter, 9.11 plf.

d. Horizontal and Brace Rails: 1.66 inches outside diameter, 2.27 plf.

e. Polymer coating over metallic coating: Black, according to ASTM F934.

2.4 TENSION WIRE

A. Polymer-Coated Tension Wire: 0.177-inch diameter, marcelled steel tension wire complying with ASTM A 817 and ASTM A 824; ASTM F668, Class 2b, over zinc-coated steel wire.

1. Color: Black

2.5 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and swing gate types.

1. Gate Height: Match fence height.
2. Gate Finish: Polymer coating to match Fence Framing.

a. Color: Black.

3. Gate Leaf Width: As indicated on Drawings.

a. Pedestrian gates shall provide not less than 32 inches in clear width with the gate in a 90 degree open position; gate leaf width shall not exceed 48 inches.
b. Service Gates: Width as indicated on Drawings.
c. Fire department vehicle access gates shall provide not less than 20 feet in clear width with the gates in a 90 degree open position.

B. Gate Framing: Steel pipe matching fence framing and as follows:

1. Gate leaf width up to 6 feet: Perimeter and intermediate framing of 1.90 inches outside diameter, 2.72 plf.
2. Gate leaf width over 6 feet to 12 feet: Perimeter framing of 2.375 inches outside diameter, 3.65 plf., and intermediate framing and bracing of 1.90 inches outside diameter, 2.72 plf.

C. Gate Construction:

1. Joints and Connections: Weld all joints and connections.

2. Bracing: Provide adjustable truss rod bracing for all gates and between intermediate framing members for gate leaves over 8 feet in width.
3. Intermediate Framing: Provide intermediate vertical framing for gates exceeding 8 feet in width; equally space intermediate framing and space not more than 8 feet on center; weld connections.
4. Kick Plates for Accessible Pedestrian Gates: Provide 1/8 inch thick by 10 inch high galvanized steel plates at the bottom of each side of gates to provide a smooth and unobstructed surface for persons in a wheel chair. Kick plates shall be without sharp edges or corners. Plates shall not interfere with the ability to adjust truss rod bracing.

D. Gate Hardware: See Specification Section 323123.

2.6 FITTINGS

A. Fittings, General: Comply with ASTM F 626.

B. Post Caps: Caps shall be weatherproof to prevent moisture intrusion into posts. Provide line post caps with loop to receive top rail; provide post cap for each post.

C. Rail and Brace Ends: Designed to provide secure connection of top rails to terminal post and brace or other rails to terminal and intermediate posts; provide for each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate rails in the fence line-to-line posts.

E. Tension and Brace Bands: Pressed steel for posts up to 4 inches in outside diameter.

F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment; 5/16 inch minimum rod diameter.

H. Tie-Wire: Standard round wire ties for attaching chain-link fabric to posts, rails, and frames; hot-dip galvanized steel, 0.148-inch (9 gage) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Hog Rings: Round wire ties for attaching chain-link fabric to bottom tension wire; 0.12-inch diameter of same material and finish as fabric wire.

J. Finish: Polymer-coated per ASTM F668, Class 2b, over zinc-coated steel wire matching coating thickness of chain-link fence fabric

2.7 PRIVACY SLATS

A. Fiber-Glass-Reinforced Plastic Slats: UV-light-stabilized fiber-glass-reinforced plastic, not less than 0.06 inch thick, sized to fit mesh specified for direction indicated.

B. Color: Black

2.8 SETTING MATERIALS

A. Cementitious Material: Portland cement, ASTM C 150, Type II, gray.

1. See specification Section 321313.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 100 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.

1. Install fencing at locations indicated on Drawings; for fencing located at property lines, install fencing inside property line.

3.4 FENCE FRAMING INSTALLATION

A. Post Excavation and Footings: Drill or hand-excavate holes for posts to diameters, depths, and spacings indicated on Drawings in firm undisturbed soil.

1. If footing diameters and depths are not indicated on Drawings, footings shall be as follows:

    a. Tops of footings shall be established as 4 inches below finish grade.
    b. Fence and gate posts per drawings.

B. Post Setting: Set posts with concrete footings at indicated spacing.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

    a. Comply with the following for posts in paved areas installed prior to paving:

        1) Posts in Concrete Paved Areas, Curbs, and Mow Strips: Coordinate top of paving elevation and pour concrete fill to approximately 6 inches below finish grade.
        2) Posts in Asphalt Concrete Paved areas: Concrete fill to be flush with adjacent paving and crowned to shed water away from posts. Coordinate top of paving elevation and form top 6 inches of footing with round concrete form of diameter matching post footing; pour concrete fill prior to paving operations.

    b. Posts in Unpaved Areas: Concrete fill to be 2 inches above finish grade and crowned to shed water away from posts. Coordinate finish grade elevation and form top 6 inches of footing with round concrete form of diameter matching post footing.

C. Terminal Posts: Install terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

D. Line Posts: Space line posts uniformly at 10 feet o.c. unless otherwise indicated.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric on fences with top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Intermediate and Bottom Rails: Where indicated or required, install and secure to posts with fittings.

H. Bottom Tension Wire: Install according to ASTM F 567 extended along and within 6 inches of bottom of fabric maintaining plumb position and alignment of fencing. Pull wire taut, without sags; install tension wire before stretching fabric; tie to each post with not less than same diameter and type of wire.

3.5 CHAIN-LINK FABRIC INSTALLATION

A. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

B. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

1. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

C. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing. Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

D. Fasten fabric to bottom tension wire with 0.120 inch diameter hog rings spaced a maximum of 24 inches o.c.

E. Privacy Slats: Install slats in vertical direction, securely lock in place.

3.6 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.7 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 323119.03
DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Decorative metal picket fencing.
2. Decorative metal rolling gates.
3. Decorative metal swinging service gates.
4. Decorative metal swinging accessible pedestrian gates.

B. Related Requirements:

1. Division 03 Section “Cast-in-Place Concrete” for concrete for setting fence posts.
2. Division 05 Section "Metal Fabrications" for metal fabrications not included in this section.
3. Division 32 Section “Gate Hardware” for gate hardware.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including finishing materials.

B. Shop Drawings: Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the professional engineer responsible for their preparation; professional engineer shall be a civil or structural engineer licensed in the State of California.

C. Sample Warranty.

D. Maintenance Data.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing decorative metal fencing and gates similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Installer Qualifications: Fabricator of products.

C. Powder-Coating Applicator Qualifications: A firm experienced in successfully applying powder coatings of type indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

D. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store decorative metal fencing and gates in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

B. Deliver components so as not to be damaged or deformed. Package fence and gate panels for protection during transportation and handling. Store components in accordance with manufacturer’s written recommendations.

C. Unload, store, and erect fence and gate panels in a manner to prevent bending, warping, twisting, and surface damage.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with decorative metal fencing and gates by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION

A. Coordinate installation of anchorages for Work of this Section. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of decorative metal fence assemblies that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures.
   b. Deterioration of metals and/or finishes beyond normal weathering including cracking, peeling, blistering, and corroding.

2. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the door to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

   a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

   b. Division of the State Architect.

2.2 MANUFACTURERS

A. Basis of Design Manufacturer: Where named manufacturer products are indication, Design, Drawings, and Specifications are based on products manufactured by the following:

1. Merchants Metals

a. Subject to compliance with requirements, provide products indicated or comparable products by one of the following:

1) Ameristar
2) Master Halco

B. Source Limitations: Obtain decorative metal fencing through one source from a single manufacturer.

2.3 DECORATIVE METAL FENCING

A. Basis of Design: Drawings and Specifications are based on the following:

1. Merchants Metals (www. merchantsmetals.com),

a. Secure-Weld Plus series,
b. Monroe panel design, 2 rail (1 top, 1 bottom)

B. Decorative Metal Fencing, General: Fabricate decorative metal fencing from galvanized steel bars and shapes of sizes and profiles indicated.

C. Fence Height: As indicated on Drawings.

D. Posts, Rails, and Pickets: Square steel tube sections complying with ASTM F2408 with galvanized exterior zinc coating and as follows:

1. Posts: Posts having a minimum yield strength of 45,000 psi and a minimum size as follows:

a. Posts for Fences: Size as indicated on Drawings, not less than 4 inches square x 1/8 inch thickness.

1) Spacing: Nominal 8 feet on center maximum; posts shall be equally spaced on a standard module.

b. Posts for Swing Gates: Size as indicated on Drawings, not less than the following:

1) Gates to 48 inches Wide: 4 inches square x 1/4 inch wall thickness.
2) Gates over 48 inches Wide to 96 inches Wide: 4 inches square x 1/4 inch thickness.
3) Gates over 96 inches wide to 144 inches Wide: 6 inches square x 3/8 inch thickness.

2. Horizontal Rails: Not less than 2 inches square x 11 gage (0.120 inch).

3. Pickets: Not less than 1 inch square x 14 gage (0.080 inch).

a. Spacing: 4-3/4” inches on center nominal; pickets shall be spaced such that a 4 inch diameter sphere shall not be capable of passing through the opening.

E. Color: Black.

F. Fence Accessories:

1. Post Caps: Manufacturer's standard flat top of formed steel, cast aluminum, or malleable iron formed to provide a weather tight closure.
2. Picket Tops: None required; picket tops to be left open.
3. Rail/Post Brackets: Manufacturer's standard steel brackets allowing field installation of fence panels without welding.

2.4 SWING GATES

A. Swing Gates: Swing gates matching fence system fabricated from galvanized square tubular steel members manufactured per ASTM F2408, having minimum yield strength of 45,000 psi. with G90 (0.9 oz/sf) zinc coating and as follows:

1. Height: Match fence framing.
2. Frame Members: Not less than 2 inches square x 10 gage (0.125 inch).
3. Pickets: Match fence pickets.

B. Swing Gate Hardware: Gate hardware shall be per Specification Section 323123.

1. Gate hardware for pedestrian access gates shall comply with accessibility requirements noted in Part 2 Article "Performance Requirements."
2. Stop/Holder: Each gate shall have a stop/holder to allow the gate to be held in an open position.

C. Accessory Materials:

1. Expanded Metal: 16 gauge galvanized expanded metal, 1/2 inch diamond mesh.

2.5 FASTENERS

A. General: Provide tamper-resistant fasteners for exposed conditions unless otherwise indicated. Fasteners shall be of the following materials:

1. Uncoated Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed, Type 304 stainless-steel fasteners where exposed.
2. Galvanized Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
3. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Fastener Materials: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating or Type 304 stainless steel.

C. Fasteners for Anchoring to Other Construction: Unless otherwise indicated, select fasteners of type, grade, and class required to produce connections suitable for anchoring indicated items to other types of construction indicated.

D. Post-Installed Anchors: Mechanical fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.

1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.6 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.7 SETTING MATERIALS

A. Cementitious Material: Portland cement, ASTM C 150, Type II, gray.

1. See specification Section 321313.

2.8 FABRICATION, GENERAL

A. General: Fence sections and gates shall be factory fabricated to prevent the need for field welding or cutting. Components of fabricated items shall not be finished until after fabrication.

B. Pickets: Pickets shall be welded to horizontal rails.

C. Swing Gates: Fabricate gates to match fences and as indicated on Drawings. Horizontal and vertical members of gate frames shall be welded to form a rigid one-piece unit.

1. Gates for pedestrian access shall comply with disabled access requirements noted in Part 2 Article “Performance Requirements.”
2. Where exit devices are indicated for gate operating hardware, maintain security by providing a barrier to prevent reaching through the gate and operating the exit device.

D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

E. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.

F. Provide necessary brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as needed to receive finish hardware, screws, and similar items unless otherwise indicated.

G. Connect members with full-penetration welds unless otherwise indicated. Use welding method that is appropriate for metal and finish indicated and that develops full strength of members joined. Finish exposed welds and surfaces smooth, flush, and blended to match adjoining surfaces.

2.9 STEEL AND IRON FINISHES

A. Manufactured Finishes: Manufacturer's standard electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash, followed by an application of an epoxy primer followed by an acrylic topcoat and oven curing of each coat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils. The coated panels and posts shall meet or exceed the performance criteria of ASTM F2408.

   a. Color: Black.

B. Galvanizing: Hot-dip galvanize products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M. Galvanize items after fabrication.

   1. Hot-dip galvanize steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
   2. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
   3. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. Powder-Coat Finish for Galvanized Metal: Prepare, treat, and coat galvanized metal to comply with resin manufacturer's written instructions and as follows:

   1. Prepare galvanized metal by thoroughly removing grease, dirt, oil, flux, and other foreign matter.
   2. Treat prepared metal with zinc-phosphate pretreatment, rinse, and seal surfaces.
   3. Apply thermosetting polyester or acrylic urethane powder coating with cured-film thickness not less than 2 mils.
   4. Color: Black.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal fences and gates.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install fencing and gates in accordance with manufacturer's written installation instructions, shop drawings, and as indicated on Drawings.

B. Provide anchorage devices and fasteners where needed to secure Work to in-place construction.

C. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

D. Set posts accurately in location, alignment, and elevation; measured from established lines and levels.

1. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil. Footings shall have a diameter not less than 4 times the width of posts and shall extend 6 inches below the bottom of the post.
2. Post Setting: Set posts in concrete into firm, undisturbed soil. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices. Crown top of exposed concrete to drain water away from posts. Protect aboveground portion of posts from concrete splatter.

E. Perform cutting, drilling, and fitting required to install decorative metal fencing. Set products accurately in location, alignment, and elevation, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

F. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of decorative metal, restore finishes to eliminate evidence of such corrective work.

G. Install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.

H. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

3.3 ADJUSTING

A. Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction,

throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

3.4 CLEANING AND PROTECTION

A. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Specification Section 099100 " Painting".

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

E. Replace fence components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

F. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 323123.03
GATE HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Commercial hardware for swinging decorative metal gates.
2. Testing of gates with panic hardware as required by NFPA 101.

B. Related Sections include but are not limited to the following:

1. Division 32 Section "Decorative Metal Fences and Gates."

1.3 REFERENCES AND ABBREVIATIONS

A. Industry standard references and abbreviations shall be as follows:

1. ADA: Americans with Disabilities Act (ADA), 2010 ADA Standards for Accessible Design.
2. BHMA: Builders' Hardware Manufacturers Association.
3. CCR: California Code of Regulations, Title 24, Part 2, California Building Code.
4. DHI: Door and Hardware Institute.
5. UL - Underwriters Laboratories.

    a. UL 305: Panic Hardware.

6. WHI: Warnock Hersey Incorporated.
7. SDI: Steel Door Institute.
8. NAAMM: National Association of Architectural Metal Manufacturers.

1.4 SUBSTITUTIONS

A. Substitutions: Substitutions will only be allowed by substitution requests submitted in accordance with Division 01 Section “Substitution Procedures” prior to the bid date.

1. In Part 2 Articles where manufacturers are listed for various product types and only one manufacturer is listed with no alternate manufacturers indicated, manufacturer listed is an established Owner standard and substitutions will not be allowed.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of hardware, as well as installation procedures and diagrams. Coordinate final hardware schedule with gates and related work to ensure proper size, thickness, hand, function, and finish of hardware. Coordinate submission of hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule. Organize schedule into “Hardware Sets” with index of gates, indicating complete designations of every item required for each opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
2. Name, part number and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set coordinated with site plan.
5. Explanation of all abbreviations, symbols and codes contained in schedule.
6. Mounting locations for hardware.
7. Gate sizes and materials.
8. List of manufacturers used and their nearest representative with address and phone number.
9. Keying information.
10. Manufacturer’s catalog cut sheets.

C. Maintenance Data: For each type of hardware to include in maintenance manuals. Include “as installed” final hardware and keying schedule.

D. As-Built Schedule: As-built/as-installed schedule with closeout documents, including keying schedule, manufacturers’ installation, adjustment and maintenance information, and supplier’s final inspection report.

E. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in the installation of hardware with five years documented experience.

B. Supplier Qualifications: A recognized architectural door hardware supplier with warehousing facilities in the Project's vicinity that has a record of successful in-service performance for supplying door hardware that is similar in quantity, type, and quality to that specified for this Project, and who employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1.7 DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery of packaged hardware items to the appropriate locations for installation.

B. Hardware items shall be individually packaged in manufacturers' original containers, complete with proper fasteners. Clearly mark packages on outside to indicate contents and locations in work.

C. Deliver permanent keys and cores directly from lock manufacturer to Owner's designated representative by secured delivery.

1.8 COORDINATION

A. Installation Templates: Distribute for gates, frames, posts and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Keying: Coordinate keying, and access control with Owner's lock hardware staff and/or consultant.

C. Review, compare, and coordinate hardware with gates for non-compatible mounting and/or operating conditions; notify Architect in writing of any conflicts.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures including excessive deflection, cracking, or breakage.
   b. Faulty operation of operators and hardware.
   c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Established from date of Substantial Completion as follows:

   a. Locksets: Three (3) years
   b. All other hardware: Two (2) years.

1.10 MAINTENANCE

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

B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of hardware Installer. Include preventive

maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND REGULATORY REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the gate to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

    a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

2.2 GATE HARDWARE

A. Gate Hardware: Gate hardware; provide hardware for each gate to comply with requirements in this Section.

1. Hardware is based on products by the manufacturers listed below for various hardware types indicated.

HARDWARE TYPE	BASIS OF DESIGN MANUFACTURER	MANUFACTURERS OF COMPARABLE PRODUCTS
Hinges		
Barrel Hinges		
Gate Closers	Locinox	
Lock and Latch sets, Cylinders, and Key System	Schlage	
Exit Devices	Von Duprin	

B. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

C. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.

2.3 GATE HARDWARE PRODUCTS

A. General: Gate hardware products shall comply with preceding "Performance and Regulatory Requirements" Article.

B. Hinges: Roller bearing hinges, weld-on.

1. Size: 3-1/4" x 3-1/2".
2. Material: Steel, primed for painting.
3. Flat (face) mount, 180-deg opening angle.
4. Weight rating: 1,000 lb/pair
5. Zerk type grease fitting.

C. Barrel Hinges: weld-on barrel hinges with round barrel body.

1. Size: 5" high, 1-3/4" wide.
2. Barrel: 1"
3. Weld Plates: 2" high, 1" wide, 3/8" thick
4. Stainless steel hinge pin.
5. Zerk type grease fitting.

D. Gate Closers: Combination heavy-duty gate closer and hinge set.

1. Basis of Design Manufacturer & Product:

a. Locinox, MAMMOTH-HD-9005 (Black).

E. Lock and Latch Sets: Cylindrical latch/lock sets with lever handled trim and as follows:

1. Lever Handles: Comply with requirements of SFM Standard 12-10-2, Section 12-10-202 contained in the CCR, Title 24, part 12, California Referenced Standards Code.
2. Breakaway Exterior Levers: Gates shall be provided with independent security breakaway levers, breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
3. Cylindrical Locksets: Extra Heavy Duty and as follows:

   a. Chassis: Cylindrical design; corrosion-resistant plated cold-rolled steel, through-bolted.
   b. Locking Spindle: Stainless steel, integrated spring and spindle design.
   c. Latch Retractors: Forged steel; balance of inner parts corrosion-resistant plated steel or stainless steel.
   d. Latchbolt: Solid steel.

e. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 2 inch clearance from lever mid-point to gate face.
f. Strikes: 16 gage curved steel with 1 inch deep box construction and lips of sufficient length to clear trim and protect clothing.
g. Certifications:

1) ANSI A156.2, 1994, Series 4000, Grade 1.
2) UL listed for A label and lesser class single gates up to 4ft x 8ft.

4. Basis of Design Manufacturer & Product:

a. Schlage ND82 with VandalGuard, RHO trim, 622 finish (Black).

F. Exit Devices: Surface mounted rim type exit devices.

1. Certifiable by independent testing laboratory that device has completed over 1,000,000 cycles and can still meet ANSI/BHMA A156.3 - 1994 standards.
2. Handing: Non-handed basic device design with center case interchangeable with all functions.
3. Fluid Damper Return: Devices shall have quiet return fluid dampeners.
4. Latchbolts: Latchbolts shall be deadlocking with ¾” throw and have a self-lubricating coating to reduce friction and wear.
5. Outside Trim: Where operating levers are provided, provide manufacturer’s standard “breakaway” feature for lever trim.
6. Strikes: All surface strikes shall be roller type and utilize a plate underneath to prevent movement.
7. Fasteners: Exit Devices to be sex-bolted through gates.

8. Basis of Design Manufacturer & Product:

a. Von Durpin, OUT-LD-99L-NL-693

G. Lock Protectors: Fabricated from steel, welded to gate frame or fence post, finish to match gate frame or fence post.

2.4 LOCK CYLINDERS

A. Review and confirm lock cylinder requirements with Owner.

B. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

2.5 KEYING

A. Review and confirm keying requirements and key system with Owner.

B. Existing System: Confirm lock cylinders and keying with Owner and provide system as directed by the Owner.

C. Key Blanks: Standard "6" pin bow key blank; tag to identify.

2.6 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

   1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of hardware unless otherwise indicated.

   1. Concealed Fasteners: For hardware units that are exposed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the hardware.
   2. Screws for strikes, face plates and similar items shall be flat head, countersunk type machine screws.
   3. All exit devices and lock protectors shall be fastened to the gate by the means of sex bolts or through bolts.

2.7 FINISHES

A. Provide finishes as described in the description for each product. If no finish is provided, acceptable finishes are as follows:

   1. Painted or powder coated to match gate and fence finish.
   2. Plated Steel and Brass: Satin chromium US26D (626) unless otherwise noted.
   3. Stainless Steel: Satin stainless steel US32D (630) unless otherwise noted.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine gates and frames, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that gates and frames are square and plumb and ready to receive work and dimensions are as instructed by the manufacturer.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

A. Install each hardware item to comply with manufacturer's written instructions.

B. Use the templates provided by hardware item manufacturer.

C. Mounting Heights: Mount hardware units at heights to comply with Performance and Regulatory Requirements Article and as follows:

1. Standard Hardware: ANSI/SDI A250.8.
2. Operating hardware shall be located between 34 and 44 inches above the floor to comply with requirements of the California Building Code and the 2010 ADA Standards for Accessible Design.

D. Hinges: Install types and in quantities required for each gate location and type, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of gate height, whichever is more stringent.

E. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.3 ADJUSTING

A. Initial Adjustment: Approximately 2 weeks prior to completion or occupancy, check each operating item of hardware for each gate to ensure proper operation or function; adjust operational hardware as needed for proper operation. Replace units that cannot be adjusted to operate as intended. Adjust gate control devices to compensate for final operation and to comply with referenced accessibility requirements.

3.4 FIELD QUALITY CONTROL

A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.

B. Egress Hardware Inspections: Inspect each gate equipped with panic hardware in accordance with NFPA 101, Section 7.2.1.15.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired assembly installations comply with specified requirements.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surface soiled by hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION AND TRAINING

A. Instruct Owner's Personnel to adjust, operate, and maintain hardware and hardware finishes during the final adjustment of hardware.

END OF SECTION

TETER
ARCHITECTS ENGINEERS CONNECTED

Project Manual

Volume 04

Technical Specifications

for

Merced City Schol District (MCSD)

John C. Fremont Elementary School,

Herbert Hoover Middle School, &

John Muir Elementary School

Perimeter Fencing Projects

District Bid No.: 2025-3-A

John C. Fremont Elementary School		Herbert Hoover Middle School		John Muir Elementary School	
TETER Project No.:	24-13173.01	TETER Project No.:	24-13173.02	TETER Project No.:	25-13360
DSA File No.:	24-35	DSA File No.:	24-35	DSA File No.:	24-35
DSA Appl. No.:	02-123701	DSA Appl. No.:	02-123702	DSA Appl. No.:	02-123703
PTN No.:	65771-148	PTN No.:	65771-147	PTN No.:	65771-149

SECTION 000107.04
SEALS PAGE

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 02-123703 INC:

REVIEWED FOR

SS ☐ FLS ☑ ACS ☑

DATE: 10/14/2025

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SECTION 099100.04
PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation and field painting, staining or refinishing of the following:

1. Exposed exterior items and surfaces.
2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Related Sections include but are not limited to the following:

1. Division 32 Sections for additive alternate No. 1 for painting existing decorative meta lfencing

1.3 DEFINITIONS

A. Definitions of gloss levels below are from "MPI Architectural Painting Specification Manual" (hereafter, "MPI Manual").

1. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
2. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
3. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
4. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
5. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
6. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.

C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on 8 inch square samples of actual material to be painted or stained. For masonry surfaces, include a mortar joint.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

E. Coating Maintenance Manual: Submit with Closeout/Maintenance Submittals a Coating Maintenance manual; manual shall include a floor plan with rooms identified by name and number, a finish schedule coordinated with the floor plan, designations of where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F.

1. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
2. Keep storage area neat and orderly. Remove oily rags and waste daily.
3. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

A. Apply paints only when the temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Protection:

1. Cover or otherwise protect finished work of other trades, work not to be painted concurrently, landscaping, and adjacent property from damage.
2. When not in use, store paints in designated areas. Keep containers closed. At end of day's work, remove empty containers, paint soaked rags, and debris. Vent fumes. Take precautions to prevent fire.

D. Sequencing, Scheduling:

1. Coordinate removal and replacement of hardware, electrical fixtures and trim, and related work of other Sections.
2. Stain, prime, back paint, and pre-finish items before installation as required.

E. Cleaning and Disposal:

1. Do not use Project plumbing fixtures or piping systems for:

a. Cleaning painting equipment and utensils.
b. Disposal of waste from cleaning or disposal of paints.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Scheduled Paint Systems: Provide paint systems as scheduled on the Drawings and listed in Part 3 Article “Paint Systems” to comply with requirements in this Section.

1. Named Manufacturers' Products: Manufacturer and product designations indicated in the scheduled paint systems are for the purpose of establishing minimum requirements; unless otherwise indicated, paint products are based on products manufactured by the following:

a. Sherwin Williams Paints.

1) Subject to compliance with requirements, provide the named products or comparable products by one of the following:

a) Dunn-Edwards Paints.
b) Glidden Professional.
c) PPG Paints.
d) Tnemec.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. VOC Content: Paints and coatings applied at the Project site shall comply with VOC limits of authorities having jurisdiction; VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); and VOC limits of the California Green Building Standards Code (CGBSC), Section 5.504.4.3 and Table 504.4.3 as follows:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 100 g/L.
3. Nonflat High-Gloss Paints and Coatings: VOC not more than 150 g/L.
4. Dry-Fog Coatings: VOC not more than 150 g/L.
5. Floor Coatings: VOC not more than 100 g/L.
6. Pretreatment Wash Primers: VOC not more than 420 g/L.
7. Primers, Sealers, and Undercoaters: VOC not more than 100 g/L.
8. Rust Preventative Coatings Applied to Ferrous Metals: VOC not more than 250 g/L.
9. Shellacs, Clear: VOC not more than 730 g/L.
10. Shellacs, Pigmented: VOC not more than 550 g/L.
11. Stains: VOC not more than 250 g/L.
12. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
13. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
14. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Colors: Provide color selections made by the Architect. Colors shall be factory mixed and match approved samples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect of anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
2. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

D. Concrete and Masonry Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Perform appropriate tests to determine alkalinity and moisture content of surfaces; testing shall be performed or witnessed by a certified representative of the paint manufacturer. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

1. Cracks and defects at concrete and masonry surfaces shall be filled with cement grout; match surface texture.
2. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. Steel Structures Painting Council's (SSPC), SSPC-SP 3, "Power Tool Cleaning."

2. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Aluminum Substrates: Remove loose surface oxidation.

I. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual." Paint/stain exposed surfaces, except where schedules indicate that a surface or material is not to be painted/stained or is to remain natural. If schedules do not specifically mention an item or surface to be painted, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.

4. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
7. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
8. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
9. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

    a. Prefinished items include the following factory-finished components:

        1) Aluminum storefronts and entrances.
        2) Anodized aluminum gypsum board and plaster trim.
        3) Acoustical wall panels.
        4) Toilet and urinal partitions.
        5) Stainless steel items.
        6) Finished mechanical and electrical equipment.
        7) Light fixtures.
        8) Distribution cabinets.

    b. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

    1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
    2. Omit primer on metal surfaces that have been shop primed and touchup painted.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

F. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

G. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

I. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING AND PROTECTION

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

E. Correction of Defective Work:

1. Repair abraded, damaged or incomplete paint surfaces by methods acceptable to Architect. Spot repairs to be well-blended into adjacent work. For large repairs, re-coat entire plane or building element in which damaged area occurs.
2. Defaced surfaces of work not to be painted shall be cleaned and their original finish restored.

F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 PAINT SYSTEMS

A. Exterior Paint Systems:

SURFACE		PAINT SYSTEM		COATS	MANUFACTURER'S DESIGNATION	
(1)	Galv. Metal & Aluminum	P56.A	Gloss	First Coat Second Coat Third Coat	B66-310 A77 A77	ProCryl Primer Solo GL Solo GL
		P56.E	Semi Gloss	First Coat Second Coat Third Coat	B66-310 A76 A76	ProCryl Primer Solo S/G SoloS/G

END OF SECTION

SECTION 104116.04
EMERGENCY KEY CABINETS (KNOX BOX)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes emergency key cabinets (Knox Box).

1.3 SUBMITTALS

A. Product Data: For each type of product including installation instructions. Include roughing-in dimensions and details showing mounting method and relationships of box and trim to surrounding construction.

PART 2 - PRODUCTS

2.1 EMERGENCY KEY CABINETS

A. Emergency Key Cabinets, General: Emergency key cabinet for secure storage of keys for use by local police and fire departments. Emergency key cabinets shall be acceptable to local police and fire departments.

B. Basis of Design: Drawings and Specifications are based on the following:

1. Knox Company; 3200 Series Hinged Door Model Knox Box.

C. Emergency Key Cabinet Properties:

1. Mounting: Surface mounted.

2. Exterior Dimensions (Body): 4” high, by 5” wide, by 3-3/4” deep.
3. Lock: UL listed, double action rotating tumblers and hardened steel pins accessed by a biased cut key.
4. Body: 1/4 inch steel plate.
5. Door: 1/2 inch thick steel with interior gasket and stainless steel hinge.
6. Finish: Manufacturer’s standard proprietary finish, black.
7. Capacity: Holds up to 10 keys and access cards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls for suitable framing depth and blocking where emergency key cabinets will be installed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Location and Height: Install emergency key cabinets in locations and at mounting heights indicated, 6 ft high minimum mounting height unless restricted by local requirements; mounting locations and heights shall be acceptable to authorities having jurisdiction.

B. Installation: Install cabinets in accordance with cabinet manufacturer’s installation instructions appropriate for construction materials of project conditions. Installation shall be capable of resisting physical attack and preventing unwanted removal of cabinet.

3.3 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust cabinet doors to operate easily without binding. Verify that locking devices operate properly.

C. On completion of cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by cabinet manufacturers.

E. Replace cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 311000.04
SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Stripping topsoil.
4. Removing above and below-grade site improvements.
5. Disconnecting, capping or sealing, and removing site utilities.

B. Related Sections:

1. Division 01 Section “Construction Waste Management” for management of waste materials.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

1. Tree protection shall be defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIALS OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Existing Conditions: Digital photographic documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged.

1. Salvage for Reinstallation: Clean and store on-site in a secure location, ready for reinstallation.
2. Salvage to Owner: Deliver to Owner’s designated location on-site.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Erosion and Sedimentation Control: Do not commence site clearing operations until temporary erosion and sedimentation control and plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

H. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

I. Landscape Protection and Repair Measures:

1. Existing turf, plat material or trees that are damaged due to construction activities, vehicular damage, stress due to lack of water or other deterioration of the existing areas to remain are to be restored by the contractor to the existing condition prior to the project at no additional cost to the district.

2. In disturbed areas contractor is to fill and grade low and depressed areas with clean topsoil. In shrub areas, after grading, contractor is to repair any damage and replace any damaged or stressed plat materials to match existing.

3. Contractor is responsible for seeding over trenches and all disturbed turf areas due to construction activities.

J. Irrigation Protection and Repair Measures:

1. All areas adjacent to the project areas have existing irrigation improvements to remain & protect. Contractor is to repair all damage to existing improvements and systems that are intended to remain to match existing improvements.

2. Damage may be direct or indirect result of contractor's work, or may be caused by neglect. Contractor to field verify existing conditions prior to commencing work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with requirements of referenced Geotechnical Report for site clearing operations.

B. Protect and maintain benchmarks and survey control points from disturbance during construction.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

D. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Identify trees to remain by wrapping a 1-inch blue vinyl tie tape flag around each tree trunk at 54 inches above the ground.

E. Protect trees, plant growth, and vegetation not specifically designated for removal.

F. Verify that existing plant life to be removed has been authorized for removal.

G. Examine site and compare individual work areas with the Drawings and Specifications.

H. Thoroughly investigate and verify conditions under which the work is to be performed.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES & IRRIGATION SYSTEMS

A. Utilities and Systems to Remain: Locate, identify, and protect utilities that are to remain from damage.

B. Interrupting Existing Utilities and Systems: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Utility and Systems Termination: Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with utility companies to shut off affected utilities and notify Owner not less than 48 hours in advance of utility termination.

1. Excavate for and remove underground utilities indicated to be removed.

3.4 CLEARING AND GRUBBING

A. Clear only limited areas required for execution of work at proposed improvement location.

B. Remove obstructions and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Use only hand methods for grubbing within protection zones.
3. Chip removed tree branches and dispose of off-site.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL EXCAVATION

A. Remove sod, grass, and similar vegetation before stripping topsoil.

B. Strip topsoil to depth of **4 inches** in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

3.6 REMOVAL OF SITE IMPROVEMENTS

A. Remove existing above and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated. Remove paving only where authorized and necessary to execute the Work.

1. Remove concrete slabs, paving, walks, gutters, and curbs to nearest existing joint locations. Neatly saw-cut joints before removing existing pavement, saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION

SECTION 312000.04
EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses, and plants.
3. Over excavation of building pad and pavement area.
4. Excavating soil and other material for surface improvements.
5. Placing fill.
6. Compaction of existing ground and fill.
7. Preparation of subgrade for other improvements.
8. Grading of soil.

B. Related Sections:

1. Division 31 Section “Site Clearing.”
2. Division 32 Section “Asphalt Paving”

1.3 REFERENCES

A. ASTM D 1557.

1.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

F. Fill: Soil material used to raise existing grades.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

H. Subgrade: Uppermost surface of an excavation.

I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

A. Material Test Reports: Classification according to ASTM D 2487 for each borrow soil material proposed for fill and backfill.

B. Chemical Test Report for Imported Fill: Chemical test report(s) as recommended by The Department of Toxic Substance Control (DTSC) guidelines for the testing of import soils for school sites.

1.6 QUALITY ASSURANCE

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

1.7 FIELD CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

B. Do not commence earth moving operations until temporary erosion and sedimentation control measures required by authorities having jurisdiction are in place.

C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

D. Do not commence earth moving operations until plant-protection measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

1. Any borrow soil materials proposed to be brought on-site are subject to inspection and testing by Owner's geotechnical testing agency to verify they are in compliance with referenced standards. Owner shall determine if testing of materials is required prior to any material being brought onto the site. Testing of materials may take up to two weeks to verify compliance with standards.

B. Soil Types:

1. Soil Type S1: Excavated and re-used material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
2. Soil Type S2: Excavated and reused material, graded, free of roots, lumps greater than one inch, rocks larger than 1/2 inch, debris, weeds and foreign matter.
3. Soil Type S3: Imported topsoil, friable loam; reasonably free of roots, rocks larger than 1/2 inch, debris, weeds, and foreign matter.

C. Soil for Fills:

1. Fill in Turf or Planting Areas: Excavated soils that have been graded and cleansed of excessive organics, debris, rocks, and lumps.
2. Fill in Turf or Other Planting Areas: Type S2 or S3.
3. Fill in Non-planting Areas: Type S1 or S2.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Contractor shall thoroughly examine the project site prior to submitting his bid to familiarize himself with the conditions of the site and the conditions in which he will be required to work.

B. Contractor shall thoroughly examine contract documents prior to bid.

1. Documents do not necessarily indicate a balanced site.
2. Contractor shall be responsible for importing materials from an off-site location or exporting excess material to an off-site location.

3.2 PREPARATION

A. Site clearing specified in Division 31 Section “Site Clearing” shall be performed prior to beginning earthwork.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations. Coordinate excavations near existing utilities with utility companies.

C. Protect and maintain erosion and sedimentation controls during earth moving operations.

D. Identify required lines, levels, contours and datum.

E. Locate, identify, and protect existing above and below grade utilities from damage.

F. Protect plant life, lawns, trees, shrubs, and other features not authorized for removal.

1. See Site Clearing Specifications for requirements for repairing damaged areas and plantings.

G. Employ equipment and methods appropriate to the work site.

H. Protect excavated areas from drainage inflow, and provide drainage to all excavated areas.

3.3 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

C. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.4 STORAGE OF SOIL MATERIALS

A. Stockpile excavated satisfactory soil and materials borrow soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Stockpile soil materials away from edge of excavations. Do not store within drip line of trees to remain.

3.5 EXCAVATION

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

B. Excavations at Edges of Tree and Plant-Protection Zones: Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots.

1. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Where authorized to cut roots, cut roots with a saw.

C. Excavation for Pavements and Flatwork: Following the stripping operations, the exposed surface in the area of proposed paved areas shall be over excavated to a minimum depth of **8 inches** below stripped ground surface or **6 inches** below the proposed pavement subgrade, whichever is deeper. Any areas encountered with debris fill in the subgrade of the over excavation shall be excavated an additional depth equal to the depth of the debris fill. The bottom of the over excavation shall be scarified to a depth of 6 inches, moisture conditioned to near optimum moisture content, and compacted as required under the “Compaction” Article.

3.6 FILLING, BACKFILLING, AND COMPACTING

A. After excavation and just prior to filling, the bottom of excavations shall be scarified to a depth of **6 inches**, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to a minimum of **95 percent** of maximum density based on ASTM Method D 1557.

B. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

C. Fills shall be placed in lifts approximately **6 inches** thick, moisture conditioned to a minimum of 2 percent above optimum moisture content, and compacted to values indicated.

D. Place soil fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

E. Compact soil materials to not less than the following percentages of maximum dry unit weight according ASTM D 1557:

1. Under structures, building slabs, steps, and pavements: **95 percent**.
2. Under walkways: **92 percent**.
3. Under turf or unpaved areas: **90 percent**.

3.7 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated on Drawings.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1/2 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.8 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the Drawings and Specifications.
2. To facilitate testing and inspection, the Contractor shall:

a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
b. Provide access to the Work for the designated Testing and Inspection Agency.
c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage of test specimens on the project site.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Testing and Inspection Services:

1. Testing and inspections shall be performed by the designated Testing and Inspection Agency.

2. Testing and inspections shall be in accordance with the 2019 California Building Code, Section 1705A.6 and Table 1705A.6, DSA Testing and Inspections form DSA 103, and Structural Drawings Special Inspection Criteria.

E. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

F. Compaction testing will be performed in accordance with ASTM D 1557-78 (Method A).

G. If tests indicate work does not meet specified requirements, recompact, or remove and replace, and retest.

3.9 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.10 CLEANING AND DISPOSAL OF SURPLUS MATERIALS

A. Rake Clean.

B. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

C. Adjacent roadways shall be kept clean during the progress of this work.

END OF SECTION

SECTION 321313.04
CONCRETE PAVING AND WALKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. SSCDOT – Standard Specifications, State of California, Department of Transportation (Caltrans) latest edition, except references to method of payment, and references to any state furnished materials.

1.2 SUMMARY

A. Section Includes: Concrete for the following:

1. Driveways.
2. Parking lots.
3. Curbs, gutters, walks and pedestrian paving.
4. Fence Post Footings.
5. Concrete Reinforcement.

B. Related Sections:

1. Division 31 Section “Earthwork.”
2. Division 32 Section “Paving Specialties” for pavement markings, wheel stops, detectable warning surfaces, and site signage.

1.3 DEFINITIONS

A. Cementitious Materials: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” portland cement.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Material Test Reports: For each of the following:

1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

D. Delivery Tags: Delivery tags for all concrete.

1.5 QUALITY ASSURANCE

A. All improvements within property owned by a City, County, or State Entity shall be in accordance with the Standards and Specifications of the authority having jurisdiction.

B. Installer Qualifications: A qualified installer who employs on Project personnel who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills required for work performed under this Section. In actual installation of the work of this Section, use adequate numbers of skilled workmen to insure installation in strict accordance with the contract documents design.

C. Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
2. ACI 318-14, “Building Code Requirements for Structural Concrete” with amendments per 2019 California Building Code, Chapter 19A, Section 1905A.
3. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 ACCESSIBILITY REQUIREMENTS FOR PEDESTRIAN PAVING

A. Concrete paving for accessible pedestrian routes for persons with disabilities shall comply with the following per 2019 California Building Code (CBC) requirements:

1. Changes in Level: 1/4 inch maximum vertical change in level; changes greater than 1/4 inch to not more than 1/2 inch shall be beveled with a slope not exceeding 1:2 vertical to horizontal; offsets exceeding 1/2 inch shall be by a ramp (CBC 11B-303).
2. Cross Slope of Walks and Ramps: 1/4:12 maximum (CBC 11B-403.3).
3. Slope of Pedestrian Pavements: 1/4:12 maximum in any direction where there is no defined direction of travel (CBC 11B-403.3).
4. Slope of Door and Ramp Landings: 1/4:12 maximum in any direction (CBC 11B-404.2.4.4 and 11B-405.7.1). Changes in level are not permitted within door and ramp landings.

5. Slope of Parking Stalls and Access Aisles for Persons with Disabilities: 1/4:12 maximum in any direction (CBC 11B-502.4). Changes in level are not permitted within accessible parking stalls and access aisles.
6. Slope of walks in the direction of travel: 1:20 (5%) maximum (CBC 11B-403.3).
7. Slope of Ramps in the Direction of Travel: 1:12 (8.33%) maximum (CBC 11B-405.2).
8. With of Walks and Ramps: 48 inches minimum clear width (CBC 11B-403.5.1 and 11B-405.5).

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from steel wire into flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: Type II gray Portland Cement conforming to the specifications of ASTM C150-02a and the requirements of Caltrans Specification Section 90 for “Type II Modified” Portland Cement.

B. Normal-Weight Aggregates: ASTM C 33, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

2.4 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

B. Water: Potable.

C. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating. It shall be the Contractor’s responsibility to verify that all curing compounds used comply with the VOC Emission requirements of the San Joaquin Valley Air Pollution Control District.

2.5 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.6 CONCRETE MIXTURES

A. General: Concrete mixtures shall comply with requirements of authorities having jurisdiction.

B. Mixtures for concrete pavements, gutters and curbs subject to vehicular traffic:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

   a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

C. Mixtures for concrete walks, gutters and curbs subject to only pedestrian traffic:

1. Concrete shall be Class 3 (Previous years denoted as Class B) and shall contain 505 pounds minimum (5 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications unless noted otherwise on the drawings.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 2500 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.58.
c. Slump Limit: 5 inches maximum.

D. Mixtures for fence post footings:

1. Concrete shall be Class 2 (Previous years denoted as Class A) and shall contain 590 pounds minimum (6 sacks) of Portland Cement per cubic yard conforming to the requirements of Section 90 of the Caltrans Specifications.

a. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.

2. Proportion mixtures to provide normal-weight concrete with the following properties:

a. Compressive Strength (28 Days): 3000 psi minimum.
b. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
c. Slump Limit: 4 inches maximum.

E. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and base surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared base surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Division 31 Section "Earth Moving."

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, 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.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

   1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

   1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
   2. Provide tie bars at sides of paving strips where indicated.
   3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys as shown on the Drawings.
   4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips where noted on the Drawings.

   1. Extend joint fillers full width and depth of joint.
   2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
   3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   5. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

   1. Grooved Joints: Form 1/4-inch wide contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius unless noted otherwise on the drawings. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.

      a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.

   2. Sawed Joints: Sawed joints shall not be used where concrete is permanently exposed to view.

a. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

1) Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius unless noted otherwise on the Drawings. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. 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.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement and dowels.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 CONCRETE FINISHING

A. Float Finish: After initial floating during placement, begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
2. Ramps: Finish ramps with medium broom finish with direction perpendicular to the direction of travel.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, no minus.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width for Grooved Joints: Plus 1/8 inch, no minus.

B. Comply with tolerances per CBC Chapter 11B for accessible routes for persons with disabilities. Refer to regulatory requirements referenced in Part 1 Article “Accessibility Requirements for Pedestrian Paving” of this specification section.

3.10 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage and pay for a qualified independent testing and inspecting agency to perform tests and inspections as applicable and prepare reports.

1. Testing and Inspection Agency shall be acceptable to the Architect and the Division of the State Architect.

B. The Architect and the Division of the State Architect shall have the right to order the testing of any materials used in the concrete construction to determine if they are of the quality specified.

C. Contractor Responsibilities:

1. The Contractor shall maintain control of the quality of materials and workmanship in order to conform with the drawings and specifications.
2. To facilitate testing and inspection, the Contractor shall:

a. Schedule tests and inspections with the Testing and Inspection Agency sufficiently in advance of operations to allow for the assignment of personnel and for the completion of testing and inspecting responsibilities.
b. Provide access to the Work for the designated Testing and Inspection Agency.
c. Furnish all necessary materials and labor to assist the designated Testing and Inspection Agency in obtaining and handling samples at the project or other sources of materials.
d. Provide and maintain for the sole use of the Testing and Inspection Agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hr. as required by ASTM C31.

3. The Contractor shall correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

E. Strength of each concrete mixture will be satisfactory if the average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

F. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

H. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, compressive strengths, or other requirements have not been met, as directed by Architect.

I. Concrete will be considered defective if it does not pass tests and inspections.

J. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

K. Test and inspection reports are to be prepared and distributed by the testing agency.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Additional construction, testing, and replacement costs resulting from damaged or improperly installed infrastructure shall be paid for by the Contractor.

C. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

D. Protect concrete paving 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.

E. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 323113.04
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences and associated fence framing.
2. Swinging service gates.
3. Privacy slats.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, gate hardware, and finishes for chain-link fences and gates.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Accessible Pedestrian Gates: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, ICC/ANSI A117.1, and the accessibility requirements of Chapter 11B of the California Building Code.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 2 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

B. No-Climb Fence Fabric: Provide chain link fence fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to “CLFMI Product Manual” and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Wire diameter: 0.148 inches (9 gage).
3. Mesh Size: 1 inches.
4. Polymer-Coated Fabric: ASTM F668, Class 2b, over zinc-coated steel wire.

    a. Color: Black

5. Selvage: Knuckled at both selvages.

2.3 FENCE FRAMEWORK

A. Posts and Rails: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 or ASTM F1083 based on the following:

1. Fence Height: As indicated on Drawings.
2. Heavy industrial strength round steel pipe, material Group IA, schedule 40, galvanized; pipe coated inside and outside by hot-dipped method, 1.8 oz. per square foot of outside and inside surfaces; provide members with minimum dimensions and wall thickness according to ASTM F 1083 based on the following:

    a. Line Posts:

        1) Fence height to 6 feet: 1.9 inches outside diameter, 2.72 plf.
        2) Fence height over 6 feet to 8 feet: 2.375 inches outside diameter, 3.65 plf.

    b. End, Corner and Pull Posts:

        1) Fence height to 6 feet: 2.375 inches outside diameter, 3.65 plf.

2) Fence height over 6 feet to 8 feet: 2.875 inches outside diameter, 5.79 plf.

c. Gate Posts: Posts for individual gate leaf widths as follows:

1) Gate leaf width to 6 feet: 2.875 inches outside diameter, 5.79 plf.
2) Gate leaf width over 6 feet to 12 feet: 4.0 inch outside diameter, 9.11 plf.

d. Horizontal and Brace Rails: 1.66 inches outside diameter, 2.27 plf.

e. Polymer coating over metallic coating: Black, according to ASTM F934.

2.4 TENSION WIRE

A. Polymer-Coated Tension Wire: 0.177-inch diameter, marcelled steel tension wire complying with ASTM A 817 and ASTM A 824; ASTM F668, Class 2b, over zinc-coated steel wire.

1. Color: Black

2.5 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and swing gate types.

1. Gate Height: Match fence height.
2. Gate Finish: Polymer coating to match Fence Framing.

a. Color: Black.

3. Gate Leaf Width: As indicated on Drawings.

a. Pedestrian gates shall provide not less than 32 inches in clear width with the gate in a 90 degree open position; gate leaf width shall not exceed 48 inches.
b. Service Gates: Width as indicated on Drawings.
c. Fire department vehicle access gates shall provide not less than 20 feet in clear width with the gates in a 90 degree open position.

B. Gate Framing: Steel pipe matching fence framing and as follows:

1. Gate leaf width up to 6 feet: Perimeter and intermediate framing of 1.90 inches outside diameter, 2.72 plf.
2. Gate leaf width over 6 feet to 12 feet: Perimeter framing of 2.375 inches outside diameter, 3.65 plf., and intermediate framing and bracing of 1.90 inches outside diameter, 2.72 plf.

C. Gate Construction:

1. Joints and Connections: Weld all joints and connections.

2. Bracing: Provide adjustable truss rod bracing for all gates and between intermediate framing members for gate leaves over 8 feet in width.
3. Intermediate Framing: Provide intermediate vertical framing for gates exceeding 8 feet in width; equally space intermediate framing and space not more than 8 feet on center; weld connections.
4. Kick Plates for Accessible Pedestrian Gates: Provide 1/8 inch thick by 10 inch high galvanized steel plates at the bottom of each side of gates to provide a smooth and unobstructed surface for persons in a wheel chair. Kick plates shall be without sharp edges or corners. Plates shall not interfere with the ability to adjust truss rod bracing.

D. Gate Hardware: See Specification Section 323123.

2.6 FITTINGS

A. Fittings, General: Comply with ASTM F 626.

B. Post Caps: Caps shall be weatherproof to prevent moisture intrusion into posts. Provide line post caps with loop to receive top rail; provide post cap for each post.

C. Rail and Brace Ends: Designed to provide secure connection of top rails to terminal post and brace or other rails to terminal and intermediate posts; provide for each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate rails in the fence line-to-line posts.

E. Tension and Brace Bands: Pressed steel for posts up to 4 inches in outside diameter.

F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment; 5/16 inch minimum rod diameter.

H. Tie-Wire: Standard round wire ties for attaching chain-link fabric to posts, rails, and frames; hot-dip galvanized steel, 0.148-inch (9 gage) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Hog Rings: Round wire ties for attaching chain-link fabric to bottom tension wire; 0.12-inch diameter of same material and finish as fabric wire.

J. Finish: Polymer-coated per ASTM F668, Class 2b, over zinc-coated steel wire matching coating thickness of chain-link fence fabric

2.7 PRIVACY SLATS

A. Fiber-Glass-Reinforced Plastic Slats: UV-light-stabilized fiber-glass-reinforced plastic, not less than 0.06 inch thick, sized to fit mesh specified for direction indicated.

B. Color: Black

2.8 SETTING MATERIALS

A. Cementitious Material: Portland cement, ASTM C 150, Type II, gray.

1. See specification Section 321313.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 100 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.

1. Install fencing at locations indicated on Drawings; for fencing located at property lines, install fencing inside property line.

3.4 FENCE FRAMING INSTALLATION

A. Post Excavation and Footings: Drill or hand-excavate holes for posts to diameters, depths, and spacings indicated on Drawings in firm undisturbed soil.

1. If footing diameters and depths are not indicated on Drawings, footings shall be as follows:

    a. Tops of footings shall be established as 4 inches below finish grade.
    b. Fence and gate posts per drawings.

B. Post Setting: Set posts with concrete footings at indicated spacing.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

    a. Comply with the following for posts in paved areas installed prior to paving:

        1) Posts in Concrete Paved Areas, Curbs, and Mow Strips: Coordinate top of paving elevation and pour concrete fill to approximately 6 inches below finish grade.
        2) Posts in Asphalt Concrete Paved areas: Concrete fill to be flush with adjacent paving and crowned to shed water away from posts. Coordinate top of paving elevation and form top 6 inches of footing with round concrete form of diameter matching post footing; pour concrete fill prior to paving operations.

    b. Posts in Unpaved Areas: Concrete fill to be 2 inches above finish grade and crowned to shed water away from posts. Coordinate finish grade elevation and form top 6 inches of footing with round concrete form of diameter matching post footing.

C. Terminal Posts: Install terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

D. Line Posts: Space line posts uniformly at 10 feet o.c. unless otherwise indicated.

E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric on fences with top rail. Install so posts are plumb when diagonal rod is under proper tension.

F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Intermediate and Bottom Rails: Where indicated or required, install and secure to posts with fittings.

H. Bottom Tension Wire: Install according to ASTM F 567 extended along and within 6 inches of bottom of fabric maintaining plumb position and alignment of fencing. Pull wire taut, without sags; install tension wire before stretching fabric; tie to each post with not less than same diameter and type of wire.

3.5 CHAIN-LINK FABRIC INSTALLATION

A. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

B. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

1. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

C. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing. Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

D. Fasten fabric to bottom tension wire with 0.120 inch diameter hog rings spaced a maximum of 24 inches o.c.

E. Privacy Slats: Install slats in vertical direction, securely lock in place.

3.6 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.7 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 323119.04
DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Decorative metal picket fencing.
2. Decorative metal rolling gates.
3. Decorative metal swinging service gates.
4. Decorative metal swinging accessible pedestrian gates.

B. Related Requirements:

1. Division 03 Section “Cast-in-Place Concrete” for concrete for setting fence posts.
2. Division 05 Section "Metal Fabrications" for metal fabrications not included in this section.
3. Division 32 Section “Gate Hardware” for gate hardware.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including finishing materials.

B. Shop Drawings: Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the professional engineer responsible for their preparation; professional engineer shall be a civil or structural engineer licensed in the State of California.

C. Sample Warranty.

D. Maintenance Data.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing decorative metal fencing and gates similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Installer Qualifications: Fabricator of products.

C. Powder-Coating Applicator Qualifications: A firm experienced in successfully applying powder coatings of type indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.

D. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store decorative metal fencing and gates in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

B. Deliver components so as not to be damaged or deformed. Package fence and gate panels for protection during transportation and handling. Store components in accordance with manufacturer’s written recommendations.

C. Unload, store, and erect fence and gate panels in a manner to prevent bending, warping, twisting, and surface damage.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with decorative metal fencing and gates by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION

A. Coordinate installation of anchorages for Work of this Section. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of decorative metal fence assemblies that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures.
   b. Deterioration of metals and/or finishes beyond normal weathering including cracking, peeling, blistering, and corroding.

2. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the door to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

   a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

   b. Division of the State Architect.

2.2 MANUFACTURERS

A. Basis of Design Manufacturer: Where named manufacturer products are indication, Design, Drawings, and Specifications are based on products manufactured by the following:

1. Merchants Metals

a. Subject to compliance with requirements, provide products indicated or comparable products by one of the following:

1) Ameristar
2) Master Halco

B. Source Limitations: Obtain decorative metal fencing through one source from a single manufacturer.

2.3 DECORATIVE METAL FENCING

A. Basis of Design: Drawings and Specifications are based on the following:

1. Merchants Metals (www. merchantsmetals.com),

a. Secure-Weld Plus series,
b. Monroe panel design, 2 rail (1 top, 1 bottom)

B. Decorative Metal Fencing, General: Fabricate decorative metal fencing from galvanized steel bars and shapes of sizes and profiles indicated.

C. Fence Height: As indicated on Drawings.

D. Posts, Rails, and Pickets: Square steel tube sections complying with ASTM F2408 with galvanized exterior zinc coating and as follows:

1. Posts: Posts having a minimum yield strength of 45,000 psi and a minimum size as follows:

a. Posts for Fences: Size as indicated on Drawings, not less than 4 inches square x 1/8 inch thickness.

1) Spacing: Nominal 8 feet on center maximum; posts shall be equally spaced on a standard module.

b. Posts for Swing Gates: Size as indicated on Drawings, not less than the following:

1) Gates to 48 inches Wide: 4 inches square x 1/4 inch wall thickness.
2) Gates over 48 inches Wide to 96 inches Wide: 4 inches square x 1/4 inch thickness.
3) Gates over 96 inches wide to 144 inches Wide: 6 inches square x 3/8 inch thickness.

2. Horizontal Rails: Not less than 2 inches square x 11 gage (0.120 inch).

3. Pickets: Not less than 1 inch square x 14 gage (0.080 inch).

a. Spacing: 4-3/4” inches on center nominal; pickets shall be spaced such that a 4 inch diameter sphere shall not be capable of passing through the opening.

E. Color: Black.

F. Fence Accessories:

1. Post Caps: Manufacturer's standard flat top of formed steel, cast aluminum, or malleable iron formed to provide a weather tight closure.
2. Picket Tops: None required; picket tops to be left open.
3. Rail/Post Brackets: Manufacturer's standard steel brackets allowing field installation of fence panels without welding.

2.4 SWING GATES

A. Swing Gates: Swing gates matching fence system fabricated from galvanized square tubular steel members manufactured per ASTM F2408, having minimum yield strength of 45,000 psi. with G90 (0.9 oz/sf) zinc coating and as follows:

1. Height: Match fence framing.
2. Frame Members: Not less than 2 inches square x 10 gage (0.125 inch).
3. Pickets: Match fence pickets.

B. Swing Gate Hardware: Gate hardware shall be per Specification Section 323123.

1. Gate hardware for pedestrian access gates shall comply with accessibility requirements noted in Part 2 Article "Performance Requirements."
2. Stop/Holder: Each gate shall have a stop/holder to allow the gate to be held in an open position.

C. Accessory Materials:

1. Expanded Metal: 16 gauge galvanized expanded metal, 1/2 inch diamond mesh.

2.5 FASTENERS

A. General: Provide tamper-resistant fasteners for exposed conditions unless otherwise indicated. Fasteners shall be of the following materials:

1. Uncoated Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed, Type 304 stainless-steel fasteners where exposed.
2. Galvanized Steel Items: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
3. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Fastener Materials: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating or Type 304 stainless steel.

C. Fasteners for Anchoring to Other Construction: Unless otherwise indicated, select fasteners of type, grade, and class required to produce connections suitable for anchoring indicated items to other types of construction indicated.

D. Post-Installed Anchors: Mechanical fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.

1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.6 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.7 SETTING MATERIALS

A. Cementitious Material: Portland cement, ASTM C 150, Type II, gray.

1. See specification Section 321313.

2.8 FABRICATION, GENERAL

A. General: Fence sections and gates shall be factory fabricated to prevent the need for field welding or cutting. Components of fabricated items shall not be finished until after fabrication.

B. Pickets: Pickets shall be welded to horizontal rails.

C. Swing Gates: Fabricate gates to match fences and as indicated on Drawings. Horizontal and vertical members of gate frames shall be welded to form a rigid one-piece unit.

1. Gates for pedestrian access shall comply with disabled access requirements noted in Part 2 Article “Performance Requirements.”
2. Where exit devices are indicated for gate operating hardware, maintain security by providing a barrier to prevent reaching through the gate and operating the exit device.

D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

E. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.

F. Provide necessary brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as needed to receive finish hardware, screws, and similar items unless otherwise indicated.

G. Connect members with full-penetration welds unless otherwise indicated. Use welding method that is appropriate for metal and finish indicated and that develops full strength of members joined. Finish exposed welds and surfaces smooth, flush, and blended to match adjoining surfaces.

2.9 STEEL AND IRON FINISHES

A. Manufactured Finishes: Manufacturer's standard electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash, followed by an application of an epoxy primer followed by an acrylic topcoat and oven curing of each coat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils. The coated panels and posts shall meet or exceed the performance criteria of ASTM F2408.

   a. Color: Black.

B. Galvanizing: Hot-dip galvanize products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips indicated to be galvanized to comply with ASTM A 123/A 123M. Galvanize items after fabrication.

   1. Hot-dip galvanize steel and iron hardware indicated to be galvanized to comply with ASTM A 153/A 153M.
   2. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
   3. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. Powder-Coat Finish for Galvanized Metal: Prepare, treat, and coat galvanized metal to comply with resin manufacturer's written instructions and as follows:

   1. Prepare galvanized metal by thoroughly removing grease, dirt, oil, flux, and other foreign matter.
   2. Treat prepared metal with zinc-phosphate pretreatment, rinse, and seal surfaces.
   3. Apply thermosetting polyester or acrylic urethane powder coating with cured-film thickness not less than 2 mils.
   4. Color: Black.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal fences and gates.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install fencing and gates in accordance with manufacturer's written installation instructions, shop drawings, and as indicated on Drawings.

B. Provide anchorage devices and fasteners where needed to secure Work to in-place construction.

C. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

D. Set posts accurately in location, alignment, and elevation; measured from established lines and levels.

1. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil. Footings shall have a diameter not less than 4 times the width of posts and shall extend 6 inches below the bottom of the post.
2. Post Setting: Set posts in concrete into firm, undisturbed soil. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices. Crown top of exposed concrete to drain water away from posts. Protect aboveground portion of posts from concrete splatter.

E. Perform cutting, drilling, and fitting required to install decorative metal fencing. Set products accurately in location, alignment, and elevation, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

F. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of decorative metal, restore finishes to eliminate evidence of such corrective work.

G. Install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.

H. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

3.3 ADJUSTING

A. Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction,

throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

3.4 CLEANING AND PROTECTION

A. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Specification Section 099100 " Painting".

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

E. Replace fence components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

F. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 323123.04
GATE HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Commercial hardware for swinging decorative metal gates.
2. Testing of gates with panic hardware as required by NFPA 101.

B. Related Sections include but are not limited to the following:

1. Division 32 Section "Decorative Metal Fences and Gates."

1.3 REFERENCES AND ABBREVIATIONS

A. Industry standard references and abbreviations shall be as follows:

1. ADA: Americans with Disabilities Act (ADA), 2010 ADA Standards for Accessible Design.
2. BHMA: Builders' Hardware Manufacturers Association.
3. CCR: California Code of Regulations, Title 24, Part 2, California Building Code.
4. DHI: Door and Hardware Institute.
5. UL - Underwriters Laboratories.

    a. UL 305: Panic Hardware.

6. WHI: Warnock Hersey Incorporated.
7. SDI: Steel Door Institute.
8. NAAMM: National Association of Architectural Metal Manufacturers.

1.4 SUBSTITUTIONS

A. Substitutions: Substitutions will only be allowed by substitution requests submitted in accordance with Division 01 Section “Substitution Procedures” prior to the bid date.

1. In Part 2 Articles where manufacturers are listed for various product types and only one manufacturer is listed with no alternate manufacturers indicated, manufacturer listed is an established Owner standard and substitutions will not be allowed.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of hardware, as well as installation procedures and diagrams. Coordinate final hardware schedule with gates and related work to ensure proper size, thickness, hand, function, and finish of hardware. Coordinate submission of hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule. Organize schedule into “Hardware Sets” with index of gates, indicating complete designations of every item required for each opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
2. Name, part number and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set coordinated with site plan.
5. Explanation of all abbreviations, symbols and codes contained in schedule.
6. Mounting locations for hardware.
7. Gate sizes and materials.
8. List of manufacturers used and their nearest representative with address and phone number.
9. Keying information.
10. Manufacturer’s catalog cut sheets.

C. Maintenance Data: For each type of hardware to include in maintenance manuals. Include “as installed” final hardware and keying schedule.

D. As-Built Schedule: As-built/as-installed schedule with closeout documents, including keying schedule, manufacturers’ installation, adjustment and maintenance information, and supplier’s final inspection report.

E. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in the installation of hardware with five years documented experience.

B. Supplier Qualifications: A recognized architectural door hardware supplier with warehousing facilities in the Project's vicinity that has a record of successful in-service performance for supplying door hardware that is similar in quantity, type, and quality to that specified for this Project, and who employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1.7 DELIVERY, STORAGE AND HANDLING

A. Coordinate delivery of packaged hardware items to the appropriate locations for installation.

B. Hardware items shall be individually packaged in manufacturers' original containers, complete with proper fasteners. Clearly mark packages on outside to indicate contents and locations in work.

C. Deliver permanent keys and cores directly from lock manufacturer to Owner's designated representative by secured delivery.

1.8 COORDINATION

A. Installation Templates: Distribute for gates, frames, posts and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Keying: Coordinate keying, and access control with Owner's lock hardware staff and/or consultant.

C. Review, compare, and coordinate hardware with gates for non-compatible mounting and/or operating conditions; notify Architect in writing of any conflicts.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures including excessive deflection, cracking, or breakage.
   b. Faulty operation of operators and hardware.
   c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Established from date of Substantial Completion as follows:

   a. Locksets: Three (3) years
   b. All other hardware: Two (2) years.

1.10 MAINTENANCE

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

B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of hardware Installer. Include preventive

maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND REGULATORY REQUIREMENTS

A. Accessibility Requirements for Gates and Hardware: Pedestrian gates and hardware shall comply with accessibility requirements of 2010 ADA Standards for Accessible Design and the California Building Code, Chapters 10 and 11B.

1. Gates shall be capable of opening a minimum of 90 degrees.
2. Gates in the open position shall provide a clear opening width of not less than 32 inches.
3. The bottom 10 inches of the push side of gates shall have a smooth uninterrupted surface that allows the gate to be opened by a wheel chair footrest without creating a trap or hazardous condition.
4. The effort to open gates shall not exceed a 5 pound force applied perpendicular to the face of the gate.
5. Gates shall be openable from the secure side (inside) without the use of a key or special knowledge or effort. Operating hardware shall not require pinching or grasping to operate hardware.

    a. Gates may be designed for key operation from either or both sides when gates are not required egress gates as determined by the Architect and the Division of the State Architect.

2.2 GATE HARDWARE

A. Gate Hardware: Gate hardware; provide hardware for each gate to comply with requirements in this Section.

1. Hardware is based on products by the manufacturers listed below for various hardware types indicated.

HARDWARE TYPE	BASIS OF DESIGN MANUFACTURER	MANUFACTURERS OF COMPARABLE PRODUCTS
Hinges		
Barrel Hinges		
Gate Closers	Locinox	
Lock and Latch sets, Cylinders, and Key System	Schlage	
Exit Devices	Von Duprin	

B. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

C. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.

2.3 GATE HARDWARE PRODUCTS

A. General: Gate hardware products shall comply with preceding "Performance and Regulatory Requirements" Article.

B. Hinges: Roller bearing hinges, weld-on.

1. Size: 3-1/4" x 3-1/2".
2. Material: Steel, primed for painting.
3. Flat (face) mount, 180-deg opening angle.
4. Weight rating: 1,000 lb/pair
5. Zerk type grease fitting.

C. Barrel Hinges: weld-on barrel hinges with round barrel body.

1. Size: 5" high, 1-3/4" wide.
2. Barrel: 1"
3. Weld Plates: 2" high, 1" wide, 3/8" thick
4. Stainless steel hinge pin.
5. Zerk type grease fitting.

D. Gate Closers: Combination heavy-duty gate closer and hinge set.

1. Basis of Design Manufacturer & Product:

a. Locinox, MAMMOTH-HD-9005 (Black).

E. Lock and Latch Sets: Cylindrical latch/lock sets with lever handled trim and as follows:

1. Lever Handles: Comply with requirements of SFM Standard 12-10-2, Section 12-10-202 contained in the CCR, Title 24, part 12, California Referenced Standards Code.
2. Breakaway Exterior Levers: Gates shall be provided with independent security breakaway levers, breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
3. Cylindrical Locksets: Extra Heavy Duty and as follows:

   a. Chassis: Cylindrical design; corrosion-resistant plated cold-rolled steel, through-bolted.
   b. Locking Spindle: Stainless steel, integrated spring and spindle design.
   c. Latch Retractors: Forged steel; balance of inner parts corrosion-resistant plated steel or stainless steel.
   d. Latchbolt: Solid steel.

e. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 2 inch clearance from lever mid-point to gate face.
f. Strikes: 16 gage curved steel with 1 inch deep box construction and lips of sufficient length to clear trim and protect clothing.
g. Certifications:

1) ANSI A156.2, 1994, Series 4000, Grade 1.
2) UL listed for A label and lesser class single gates up to 4ft x 8ft.

4. Basis of Design Manufacturer & Product:

a. Schlage ND82 with VandalGuard, RHO trim, 622 finish (Black).

F. Exit Devices: Surface mounted rim type exit devices.

1. Certifiable by independent testing laboratory that device has completed over 1,000,000 cycles and can still meet ANSI/BHMA A156.3 - 1994 standards.
2. Handing: Non-handed basic device design with center case interchangeable with all functions.
3. Fluid Damper Return: Devices shall have quiet return fluid dampeners.
4. Latchbolts: Latchbolts shall be deadlocking with ¾” throw and have a self-lubricating coating to reduce friction and wear.
5. Outside Trim: Where operating levers are provided, provide manufacturer’s standard “breakaway” feature for lever trim.
6. Strikes: All surface strikes shall be roller type and utilize a plate underneath to prevent movement.
7. Fasteners: Exit Devices to be sex-bolted through gates.

8. Basis of Design Manufacturer & Product:

a. Von Durpin, OUT-LD-99L-NL-693

G. Lock Protectors: Fabricated from steel, welded to gate frame or fence post, finish to match gate frame or fence post.

2.4 LOCK CYLINDERS

A. Review and confirm lock cylinder requirements with Owner.

B. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

2.5 KEYING

A. Review and confirm keying requirements and key system with Owner.

B. Existing System: Confirm lock cylinders and keying with Owner and provide system as directed by the Owner.

C. Key Blanks: Standard "6" pin bow key blank; tag to identify.

2.6 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

   1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of hardware unless otherwise indicated.

   1. Concealed Fasteners: For hardware units that are exposed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the hardware.
   2. Screws for strikes, face plates and similar items shall be flat head, countersunk type machine screws.
   3. All exit devices and lock protectors shall be fastened to the gate by the means of sex bolts or through bolts.

2.7 FINISHES

A. Provide finishes as described in the description for each product. If no finish is provided, acceptable finishes are as follows:

   1. Painted or powder coated to match gate and fence finish.
   2. Plated Steel and Brass: Satin chromium US26D (626) unless otherwise noted.
   3. Stainless Steel: Satin stainless steel US32D (630) unless otherwise noted.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine gates and frames, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that gates and frames are square and plumb and ready to receive work and dimensions are as instructed by the manufacturer.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

A. Install each hardware item to comply with manufacturer's written instructions.

B. Use the templates provided by hardware item manufacturer.

C. Mounting Heights: Mount hardware units at heights to comply with Performance and Regulatory Requirements Article and as follows:

1. Standard Hardware: ANSI/SDI A250.8.
2. Operating hardware shall be located between 34 and 44 inches above the floor to comply with requirements of the California Building Code and the 2010 ADA Standards for Accessible Design.

D. Hinges: Install types and in quantities required for each gate location and type, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of gate height, whichever is more stringent.

E. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.3 ADJUSTING

A. Initial Adjustment: Approximately 2 weeks prior to completion or occupancy, check each operating item of hardware for each gate to ensure proper operation or function; adjust operational hardware as needed for proper operation. Replace units that cannot be adjusted to operate as intended. Adjust gate control devices to compensate for final operation and to comply with referenced accessibility requirements.

3.4 FIELD QUALITY CONTROL

A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.

B. Egress Hardware Inspections: Inspect each gate equipped with panic hardware in accordance with NFPA 101, Section 7.2.1.15.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired assembly installations comply with specified requirements.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surface soiled by hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION AND TRAINING

A. Instruct Owner's Personnel to adjust, operate, and maintain hardware and hardware finishes during the final adjustment of hardware.

END OF SECTION