

PROJECT MANUAL

of the Material and Labor Required for Construction of:

Bartos Architecture Project Number

17-006.9

Mission Hill Middle School

Reroof & Mechanical
Exterior Painting
Window Replacement

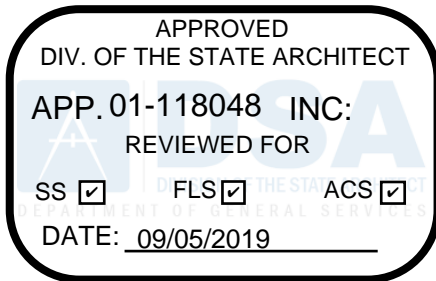
for

Santa Cruz City Schools

405 Soquel San Jose Road
Santa Cruz, California 95073

DSA Submittal:
3 March 2019

PROJECT MANUAL



of the Material and Labor Required for Construction of Mission Hill Middle School

Reroof & Mechanical
Exterior Painting
Window Replacement

425 King Street, Santa Cruz, California
Santa Cruz City Schools

405 Soquel San Jose Road
Santa Cruz, California 95073

Architect

Bartos Architecture, Inc
1730 South Amphlett Blvd, Suite 225
San Mateo, CA. 94402

Mark Bartos, Architect



Structural Engineer

Rinne & Peterson
1121 San Antonio Road
Palo Alto, CA 94303

Larry Ho, SE



Walkway Engineer

Petra Seismic Design
14525 Farm to Market Road 529
Houston, TX 77095

Todd Kemen, SE



Mechanical Engineer

Laws & Associates
1801 Murchison Drive, #160
Burlingame, CA 94010

Kent Laws, PE



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Notice to Contractors

NOTICE is hereby given that the

Board of Trustees of the Santa Cruz City Schools of Santa Cruz County, California

invites and will receive sealed proposals for the furnishing of all labor and materials for the following work:

Santa Cruz City Schools

Reroof & Mechanical

Exterior Painting

Window Replacement at Mission Hill Middle School

AT

Architect's Project Number:

17-006.9

CUHSD School Site:

Mission Hill Middle School

Mandatory Pre-Proposal Conference

TBD

Proposal Submittal Date

TBD

Notice is hereby given that the governing board ("Board") of the Santa Cruz City School

Written Proposals must be submitted no later than the Proposal Submittal Date at:

Santa Cruz City Schools Facility Services Office
536 Palm Street, Santa Cruz, California 95060

This Notice seeks Proposals only from those entities who intend to enter into a Contract with the Santa Cruz City Schools and who possess the minimum qualifications. The work for which this proposal is sought shall require an entity in possession of the following California license in accordance with the Contractor's License Act of the State of California:

Class B General Contracting

The Santa Cruz City School District shall award the contract to the lowest responsive and responsible bidder who shall give such security as the District requires and who shall meet the other requirements of this Notice.

Any bidder not so licensed at the time of the bid opening will be rejected as non-responsive.

All bidders shall be registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

No bids will be accepted from, or a contract awarded to, any party or firm in arrears to the District or who is a defaulter as surety, contractor, or otherwise.

Each bid must be accompanied by certified check, cashier's check, or bidder's bond in the amount of ten percent (10%) of the tendered bid, made payable to the order of: **Santa Cruz City Schools** as a guarantee that the bidder

will, after being notified of acceptance of his/her bid, enter into a contract with the Board in accordance therewith and file the necessary bonds as called for in the Specifications.

Rejection of Bids

The board reserves the right to reject any and all bids. The Board also reserves the right to waive any informality in any bid received.

Selection of Lowest Bid

The successful bidder will be selected per the lowest base bid. Per Public Contract Code Section 20103.8

Prevailing Wage Requirements

This Project is a "public work" to which general prevailing wage rates will apply in accordance with Labor Code Section 1770, et seq. A copy of the prevailing wage rates is on file and available for review in the School District's principal office located at 405 Old San Jose Road, Soquel, California and shall also be posted at the Project job site. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the School District.

Escrow Accounts

Pursuant to Section 22300 of the Public Contract Code, the Agreement will contain provisions permitting the successful bidder to substitute securities for any monies withheld by the District to ensure performance under the agreement or permitting payment of retentions earned directly into an escrow account.

Submittal of Certified Payroll

Contractor shall be required to submit certified payroll monthly as a condition of payment. Certified payroll will be kept in District records. District is not providing a Labor Compliance Program.

DVBE Requirements

The SCCS has a 3% participation goal for Disabled Veteran Business Enterprises.

Pre-qualification of Bidders

As a condition of bidding and in accordance with the provision of Section 20111.5 of the California Public Contract Code, prospective bidders are required to submit to the District a pre-qualification questionnaire and financial statement.

Once submitted a Contractor's pre-qualification statement is valid until the financial information shown in it is more than one year old.

Prequalification packages are available from:

Downloadable:

<http://www.bartosarchitecture.com/bidding/17-006.9/>

or

Bartos Architecture
1730 S. Amphlett Blvd. Suite 225
San Mateo, California 94402

Call: 650-340-1221

Packages will also be available at mandatory pre-bid conference. Prequalification questions must be e-mailed in writing to L.M. Sweaney Lynns11s@aol.com Call 909-336-2771 for further information. Submit prequalification documents as required in prequalification package.

NOTE: Contractors previously prequalified with the district in the past year may be exempt from prequalification requirements for this project. The architect and District will determine this on a case by case basis.

Work shall be done in strict accordance with Project Documents prepared by:

Plans and Specifications prepared by:

Bartos Architecture, Inc.
1730 S. Amphlett Blvd. Suite 225
San Mateo, CA 94402

for the project noted above. Refer to Architects' project number for all related documents.

BY ORDER of the Board of Trustees of the Santa Cruz City Schools

Clerk of the Board

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Instructions to Bidders

These instructions are considered part of the Project Manual and represent basic requirements, which must be met in order to submit a "Responsive Proposal" for the project. Specific information for the project regarding dates and submittal locations is provided in the following Documents:

Section 001000: Notice to Contractors

Section 010000: Project Summary

1. Pre-Proposal Conference

- A. Pre-Proposal Conference and Project Walk-Through has been scheduled as noted in Section 00100. This conference will occur at the project site unless otherwise noted. It will include a general review of the work of the project, a review of site conditions and an opportunity to submit questions regarding the Work of the Project.
- B. Attendance at this Pre-Proposal Conference by primary Contractors is required to be eligible to submit a Proposal for this contract. Attendance of the Pre-Proposal Conference by Sub-contractors is highly recommended.
- C. All bidders will be held to have familiarized themselves with all discernible conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not.

2. Plan Holders

- A. Plan Holders shall be defined as those entities who are capable of submitting a Proposal for the Work. That capability is dependent on the following minimum criteria:
 - 1. Possession of required California License as defined in Section 00100 which will be utilized in execution of the Work of this Contract
 - 2. Attendance and Sign-in at Mandatory Pre-Proposal Conference.

3. Project Information

- A. Project information shall be defined as the information distributed by the District Representative and Architect in support of receiving Proposals for this Work. Project Information shall be limited to Plans, Specifications and Addenda only.
- B. All subsequent correspondence relating to this project will be transmitted to Plan Holders only. Project Information will be actively distributed to Plan Holders only. Project Information will OFFICIALLY be available to non Plan Holders via the Primary Plan Holders only.
- C. This Notice does not seek Proposals from entities other than those capable of performing the Work based on the requirements contained herein. Project Information shall not be distributed to entities that are not in a position to perform this Work. Project Information will be available to other entities as described above.
- D. All sub-contractors and other non-Plan Holders wishing to receive information regarding project requirements should request that information from their respective Plan Holders or shall view information at alternate locations:

-
1. Via Bartos Architecture (the District Representative) at:

Bartos Architecture
1730 S. Amphlett Blvd. Suite 225
San Mateo, CA 94402

By Appointment only/ 48 hr notice
Call (650) 340-1221 for appointment

2. Via the Bartos Architecture website at:

<http://www.bartosarchitecture.com/sccsd>

- E. The Districts' Program Manager (Bartos Architecture) will transmit to all Plan Holders such Addenda, as the Architect or District Representative, in its discretion, considers necessary in response to questions arising at the Pre-Proposal Conference. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued as a result of the Pre-Proposal Conference shall constitute the sole and exclusive record and statement of the results of the Pre-Proposal Conference.
- F. ADDENDA WILL BE OFFICIALLY DISTRIBUTED VIA BARTOS ARCHITECTURE WEBSITE. PLANHOLDERS WILL RECEIVE EMAIL INSTRUCTIONS FOR RETRIEVAL.

4. Examination of Contract Documents and Work Site

- A. Before submitting a Proposal, Bidders shall examine the contract, the drawings, the specifications, and other contract documents. Bidders shall visit the site of the proposed work and shall fully inform themselves of all conditions in and about the work site, the building or buildings, if any, and any work that may have been done thereon. However, no bidder shall visit the site without prior authorization. All bidders shall contact the District Representative for coordination of site visits. Submission of a Proposal constitutes acknowledgment of the terms of this provision.

5. DSA Approved Documents

- A. The Documents issued for Proposal purposes have been approved by the Division of the State Architect (DSA).
- B. The Contractor will be expected to perform the Work based on DSA approved documents and any subsequent Addenda, only.

6. Copies of Documents

- A. All designated "Plan Holders" (as defined above) shall be provided one copy of the Bid Documents (Plans and Specifications) at the Mandatory Pre-Proposal Conference. These copies shall be provided at no charge to the Plan Holder.
- B. Additional copies may be obtained at the cost of the Plan Holder (or the Plan Holder may elect to assign the costs to a designated subcontractor, vendor or supplier from whom the Plan Holder is seeking a sub-bid.) Plan Holders shall recognize that any sub-bids solicited by the Plan Holder is strictly by arrangement between the Plan Holder and a prospective subcontractor and therefore the School District should not be made to bear any cost for providing plans to the subcontractor, other than the copy described above.

-
- C. Alternatively, Plan Holders, subcontractors, vendors, suppliers or other interested parties may view the plans as indicated in the PROJECT INFORMATION section above.

7. Project Understanding

- A. Submission of Proposal signifies careful examination of the Site, Contract Documents and complete understanding of the nature, extent and location of Work to be performed as recited in Section 010000.
- B. All questions about the meaning or intent of the Contract Documents are to be directed to the Architect. Interpretations or clarifications considered necessary by the Architect in response to such questions will be issued by Addenda emailed or otherwise delivered to all parties recorded by the Architect and District Representative as having received the Bidding Documents. Addenda shall be written and will be issued to each Bidder at the address supplied the District by the Bidder, or as directed by Architect or District Representative. Questions received less than seven (7) days prior to the date for opening Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- C. Addenda may also be issued to modify the Bidding Documents as deemed advisable by the Architect or District Representative.
- D. Addenda shall be acknowledged in Proposal Form by number and shall be part of Contract Documents. A complete listing of Addenda may be secured from the District Representative.
- E. Proposals shall be based on products and systems specified in the Contract Documents or listed by name in Addenda.

8. Substitutions

The following satisfies the requirements of Section 3400 of the California Public Contract Code:

- A. Contractors and material suppliers may submit a request for substitution to the Architect until 7 calendar days prior to Proposal date. If approved, pre-Proposal substitution approvals will be distributed to all Plan Holders via addendum prior to Proposal date. There is no guarantee of approval of a substitution prior to Proposal date. There shall be no presumption of approval in Contractor's Proposal, unless expressed written approval has been distributed via addenda.
- B. General Contractor may submit a request for substitution for a period of 30 calendar days following the Notice of Award. There is no guarantee of approval of a substitution after the award of contract.
- C. General Contractor shall ensure that all Subcontractors or Vendors providing materials to General Contractor are aware of these requirements. Time is of the essence with these requirements.
- D. Requests for substitutions shall contain sufficient information to assess acceptability of product or system. Insufficient information shall be ground for rejection of substitution. Refer to Section 01630 "Product Options and Substitutions."

9. General Contractor's Responsibility for Project Scope

- A. Submission of a Proposal signifies that the General Contractor has reviewed the contract documents including all addenda exhaustively thus ensuring that their Proposal covers all scope indicated. Responsibility for division of work into trade divisions is the **SOLE**

responsibility of the General Contractor. Trade scope may be indicated at any location in these documents regardless of discipline title. If an item is not covered or is excluded in a Subcontractor's bid to the General Contractor, the General Contractor shall provide other means by which the item is included as part of the Proposal.

10. Required Documents

All persons wishing to submit a Proposal for this work (herein referred to as "Bidders") shall provide the following information and shall comply with all requirements of this section and all other sections of the Project Manual of which this Section is a part.

- A. **Certificate of Prequalification.**
- B. **Proposal.** Bidders shall submit Proposals on the form provided in Section 002000. Proposals not submitted on the required form shall be deemed non-responsive and shall not be considered. All items on the form shall be filled out. Numbers should be stated in figures, and signatures of all individuals must be in long hand. The completed form should be without interlineations, alterations, or erasures.
- C. **Subcontractor List.** In accordance with California Public Contract Code Section 4104, Bidders shall submit names of all subcontractors and their respective bid item sub-bids on Sub-Contractor form provided as Section 002400. List those subcontractors who will perform any portion of Work, including labor, rendering of service, or specialty fabrication and installation of portions of the work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total Proposal. Any violation of this provision may result in Proposal being deemed non-responsive and not being considered.
- D. **Non Collusion Affidavit.** In accordance with California Public Contract Code Section 7106, Bidders shall submit a Non-Collusion Affidavit as provided as Section 002500 with their Proposals. Proposals submitted without the affidavit will be deemed non responsive and will not be considered.
- E. **Required Documents Form.** Bidders shall submit completed Required Documents form provided as Section 00290 as verification that the Bidder understands all document requirements.
- F. **Contractor Acknowledgements Form.** Bidders shall submit completed Contractor Acknowledgements Form provided as Section 003000 as verification that the Bidder understands all document requirements.
- G. **Bid Proposal Security.** A ten per cent (10%) bid security shall be required with the submittal of Proposals. Proposals shall be accompanied by a certified cashier's check or Bid / Proposal Bond for an amount not less than (10%) of the Proposal amount. The cashier's check or Bid / Proposal Bond shall be made payable to the order of the Santa Cruz City School District. The Bond shall be secured by a surety company satisfactory to the District. The cashier's check or Bond shall be given as a guarantee that the bidder will enter into the contract if awarded the work, and in the case of refusal or failure to enter the contract within (14) calendar days after notification of the award of the contract, the District shall have the right to award to another bidder. If the bidder fails or refuses to enter into the contract in a timely manner, the District reserves the right to declare the Bid / Proposal Bond forfeited and to pursue all other remedies in law or equity relating to such breach including, but not limited to, seeking recovery of damages for breach of contract. Failure to provide bid security, or bid security in the proper amount, shall result in the rejection of the Proposal.
- H. **DVBE Participation Goal Certification.** Bidders shall submit DVBE Participation Goal Certification provided as Section 002700 certifying that the General Contractor has made a

good faith effort to achieve the District's Disabled Veteran Business Enterprises participation goals, or that the General Contractor will meet the District's DVBE Participation Goals. Refer to Section 008100, Specific Conditions Item 4 and Section 002700, DVBE Participation.

- I. **Abatement Unit Prices.** Bidders shall submit completed Abatement Unit Prices form provided in Hazmat Specifications Appendix.

11. Execution of Forms

- A. Each Proposal shall include the full business address of the bidder and must be signed by the bidder with his or her usual signature. Proposals by partnership must furnish the full names of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters. Proposals by corporations must be signed with the legal name of the corporation, followed by the signature and designation of the President, Secretary, or other person authorized to bind the corporation in this matter. The name of each person signing shall also be typed or printed below the signature. When requested by the District, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished. A bidder's failure to properly sign required forms may result in rejection of the Proposal.
- B. Proposals shall be clearly written without erasure or deletions. The District reserves the right to reject any Proposal containing erasures or deletions.
- C. Bidders may not modify Proposal Form or qualify their Proposals.

12. Proposal Submittal

- A. Bidders must supply all information required by Proposal documents and specifications. Proposals must be full and complete. The District reserves the right in its sole discretion to reject any Proposal as non-responsive as a result of any error or omission in the Proposal.
- B. No verbal, digital, telegraphic, or telephonic Proposals or modifications thereof will be considered
- C. Bidders shall submit Proposals and all Required Documents in sealed envelopes or boxes. Envelopes or boxes shall be hand delivered to the Reception Desk at the District Office at the address noted in Section 001000.
- D. Envelopes or boxes must be sealed, and marked with name and address of the Bidder, and addressed to the District. Envelopes or boxes must also include the name of the Project as it appears in Section 001000.
- E. Proposals must be submitted by date and time shown in Section 001000.
- F. Proposal must be sealed and filed with the District according to instructions in Section 00100. The District recommends that Proposals be hand delivered in order to insure their timely receipt. Proposal results shall constitute public record and shall be available for inspection at the Business Office, at the District Administration Building, following the Proposal opening.

13. Withdrawal of Proposals

- A. Proposal may be withdrawn by the bidder prior to the time fixed for the opening of Proposals, but may not be withdrawn for a period of sixty (60) days after the opening of the Proposals. A successful bidder shall not be relieved of the Proposal submitted without the District's consent of bidder's recourse to Public Contract Code sections 5100 et. Seq.

14. Acceptance of Proposals

- A. No Proposals will be accepted from, or a contract awarded to, any party or firm in arrears to the District or who has defaulted in any way against the District as surety, contractor, or otherwise. No Proposal will be accepted from a contractor who has not been licensed in accordance with the provisions of the Contractor's License Act of the State of California.
- B. The District reserves the right to reject any or all Proposals, including without limitation the right to reject any or all non-conforming, non-responsive, unbalanced or conditional Proposals. The District reserves the right to reject the Proposal of any Bidder if the District believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Proposal is not responsive or the Bidder is unqualified or of doubtful financial ability or if the Bidder fails to meet any other pertinent standard or criteria established by the District. The District reserves the right to waive informalities not involving price, time or changes in the Work.
- C. The District reserves the right, upon rejection of all Proposals, to re-bid the project as is, or with modifications, with the goal of receiving a responsive Proposal in support of the project goals.
- D. In evaluating Proposals, the District will consider the qualifications of Bidders, whether or not the Proposals comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Proposal Form or prior to the Notice of Award. The District will conduct such investigations as it deems necessary to assist in the evaluation of any Proposal and to establish the responsibility, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to the District's satisfaction.

15. Apparent Low Bidder

- A. The following documents are to be executed and submitted by apparent low Bidder after Proposals have been opened and duly inspected. All Bidders shall be prepared to submit the following documents to the District by 5 o'clock p.m. of the Second **working** day following opening and inspection of Proposals.
 - 1. Insurance Certificates and Endorsements required by General Conditions
 - 2. Payment Bond
 - 3. Performance Bond

16. Award of Contract

- A. The District shall award the contract to the lowest, pre-qualified, responsible and responsive bidder who shall give such security as the Board requires. The District reserves the right to reject any and all Proposals, to contract work with whomever and in whatever manner the District decides, to abandon the work entirely and to waive any informality or non substantive irregularity as the interest of the District may require.

17. Time

- A. The work to be performed under this contract shall commence and be substantially completed within the time limits as set forth under:
 - Section 010000: Project Summary
- B. ***All time shall be measured in Calendar Days.***

18. Prevailing Wages

- A. The successful bidder will be required to comply with provisions of the labor code pertaining to payment of the generally prevailing rate of wages and apprenticeship or other training programs and all other requirements of the California Labor Code for Public Works as they apply to School Districts. It shall be mandatory upon the Contractor to whom the contract is awarded and upon any subcontractor under him, to pay not less than the said specified rate to all laborers, workmen, and mechanics employed by them in the execution of the contract.
- B. Contractor shall be required to submit certified payroll monthly as a condition of payment. Certified payroll will be kept in District records. District is not providing a Labor Compliance Program.
- C. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are deemed included in the Proposal documents and are on file at the District office, and shall be made available to any interested party on request. The General Contractor shall post a copy of the determination of the director of the prevailing rate of per diem wages in a conspicuous location on the job site.

19. Bid Protest

- A. In order to protest the District's award of Contract, a disappointed bidder must:
 - 1. Submit a written description of all grounds for its protest to the District within forty-eight (48) hours of the time that the District announces an apparent low bidder; and
 - 2. File an action with the Superior Court seeking to enjoin enforcement of the contract and serve it on District within five (5) business days of the award of contract.

End of Section

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Proposal

Santa Cruz City School District

**Reroof & Mechanical
Exterior Painting
Window Replacement at
Mission Hill Middle School**

NOTE: Refer to "Notice to Contractors" for Proposal due dates, Pre-Proposal Conference dates and other pertinent schedule information. Information contained in those documents has not been repeated herein.

To:

The Board of Trustees

Santa Cruz City School District

In compliance with the advertisements of your Board calling for Proposals to furnish to the Santa Cruz City School District, Santa Cruz County, all materials and labor to be used and employed in the construction of:

Gym Roofing Replacement

At

Mission Hill Middle School

In accordance with the Plans and Specifications prepared by:

Bartos Architecture

1730 S. Amphlett Blvd. Suite 225

San Mateo, CA 94402

Architect's Project Number:

17-006.9

Therefore the undersigned hereby proposes to furnish all labor and materials for completion of said work in strict accordance with said Plans, and Specifications for the following sum:

Bidder:

.....
Company Name

.....
Address

.....
Telephone

Base Bid:

The Winning Bidder will be selected based on the **Lowest Base Bid**.

For all Labor and Materials required to complete the Work of this Project as shown on the Drawings, Specifications and Addenda.

Form: **LUMP SUM PROPOSAL**

Amount:

	(\$)
Text	Dollars	

After Award of Contract, the District will determine whether to proceed with the work defined by Alternate Prices. The Construction Contract will be executed based on Base Price plus the sum of District chosen Alternate Prices.

Additive Alternate Price 1: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

Additive Alternate Price 2: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

Additive Alternate Price 3: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

Additive Alternate Price 4: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

Additive Alternate Price 5: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

Additive Alternate Price 6: To Be Determined

Refer to Drawings, Specifications and Addenda.

Amount:

	(\$)
Text	Dollars	

The following unit prices will not be utilized as a basis for selection of the lowest responsive bid. These unit prices may be utilized by District – at district’s option to determine appropriate pricing for change orders.

Unit Prices

		(\$)
	Unit Price: Text	Dollars per Square Foot
		(\$)
	Unit Price: Text	Dollars per Square Foot
		(\$)
	Unit Price: Text	Dollars per Linear Foot
		(\$)
	Unit Price: Text	Dollars per Linear Foot
		(\$)
	Unit Price: Text	Dollars per Linear Foot
		(\$)
	Unit Price: Text	Dollars per Linear Foot
		(\$)

The undersigned bidder declares that this Proposal is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that the proposal is genuine and not collusive or sham; that the undersigned bidder has not directly or indirectly induced, solicited, colluded, or agreed with any bidder or anyone else to put in a sham proposal or to refrain from bidding; that the undersigned bidder has not directly or indirectly sought by agreement, communication or conference with anyone else to fix his bid price or the bid price of any other bidder, or to secure any advantage against the Owner or anyone interested in this proposal as principals are those named herein; that all statements named in this proposal are true, that the undersigned bidder has not directly or indirectly submitted his bid price or any breakdown thereof or the contents thereof, or divulged information or data relative thereto, to any other person, partnership, corporation, or association, except to such person or persons as have a direct financial interest in the bidder’s general business.

In accordance with California Contractor licensing procedures, the prime contractor shall possess the required valid contractor’s license at the time of contract award.

Bidder (Signature)

Cashier's Check or Certified Check or bidder's bond drawn payable to the order of the Santa Cruz City School District in the sum of:

Text	Dollars
In the amount equal to ten percent (10%) of the proposal bid, as required by Instructions To Bidders, is enclosed	
The undersigned agrees that the bid amount stated shall remain valid for a period as defined in Section 001100 from the bid opening date. All bid documents shall be retained until the contract has been awarded or until all bids have been rejected.	
If awarded the Contract the undersigned hereby agrees to commence work within a maximum of ten (10) days after execution of the contract unless defined elsewhere in the Instructions to Bidders or the Contract Documents	

The following individual acknowledges receipt of all Addenda. A list of published Addenda is available from the Architect. All Addenda shall be reviewed and acknowledges for Proposal to be considered responsive.

[illegible]

Required Documents

This Proposal is not valid unless accompanied by the documents defined in Section 001000 and Section 002900.

Execution

The undersigned has examined the location of the proposed work and is familiar with the local conditions at the place where the work is to be performed and has carefully examined the plans and specifications and acknowledges their sufficiency for purposes of completing this proposal.

Signed	X
Print	
Company Name	
Address	
Contractor's License Number	
Date of Expiration	
Public Works Contractor (PWC) Registration Number	
Phone Number for Verification of Authority	

Bidder (Signature)

End of Section

Subcontractor List

Listed below is the name of each subcontractor and the location of the office of each subcontractor who will perform work or labor in support of the work of this contract herein above described. Per Section 4101 of California Public Contract Code all first or second tier subcontractors performing any portion, or portions, of the bid in excess of 1/2 of 1% of base bid shall be listed. Include additional pages as necessary to list all subcontractors.

Per Section 4104 of California Public Contract Code; If a Prime Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of work as described below, the Prime Contractor agrees that he is fully qualified to perform that portion himself and shall perform that portion himself.

Per Section 1725.5 of California Labor Code; A contractor shall be registered with the Department of Industrial Relations to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code.

Name and Address of Subcontractor	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #
	Scope	License	PWC #

Non-Collusion Declaration

To Be Executed by Bidder and Submitted with Proposal

State of California

County of _____

being first duly sworn, deposes and states that he or she is

Name

Position

of _____,
Company

the party making the attached Proposal; that the Proposal is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that the Proposal is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham Proposal, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a false Proposal or that anyone shall refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Proposal 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract. All statements contained in the bid are true, and, further, the bidder has not, directly or indirectly, submitted his Proposal price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham Proposal.

Signature

Company

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this _____ day _____, 2017 at _____, California.

Authority: Public Contract Code 7106
CCP 2015.5

Bidder Signature _____

End of Section

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Escrow Agreement

Per California Public Contract Code. § 22300

Escrow Agreement for Security Deposits in Lieu of Retention

This Escrow Agreement ("Escrow Agreement") is made and entered into this _____ day of, _____, 2017 by and between the **Santa Cruz City Schools ("District")**, whose address is

Santa Cruz City Schools Facility Services Office
536 Palm Street, Santa Cruz, California 95060

and

_____ (**"Contractor"**), whose place of business is located at

and

_____ (**Name of Bank**), a state or federally chartered bank in the state of California, whose place of business is located at: _____

("Herein after called Escrow Agent").

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

1. Pursuant to Section 22300 of Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by **District** pursuant to the Construction Contract entered into between **District** and Contractor Front Landscape Improvements Project project, in the amount of \$_____ dated _____ (the "Contract"). Alternatively, on written request of Contractor, **District** shall make payments of the retention earnings directly to Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, Escrow Agent shall notify **District** within ten (10) calendar days of the deposit. The market value of the securities at the time of substitution shall be at least equal to the cash amount then required to be withheld as retention under terms of Contract between **District** and Contractor. Securities shall be held in name of _____, and shall designate Contractor as beneficial owner.
2. **District** shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.
3. When **District** makes payment of retention earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the Parties shall be equally applicable and binding when **District** pays Escrow Agent directly.
4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of **District**. Such expenses and payment terms shall be determined by **District**, Contractor and Escrow Agent.

-
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to **District**.
 6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from **District** to Escrow Agent that **District** consents to withdrawal of amount sought to be withdrawn by Contractor.
 7. **District** shall have the right to draw upon the securities in event of default by Contractor. Upon seven (7) days' written notice to Escrow Agent from **District** of the default, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by **District**.
 8. Upon receipt of written notification from **District** certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.
 9. Escrow Agent shall rely on written notifications from **District** and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and **District** and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.
 10. Names of persons who are authorized to give written notice or to receive written notice on behalf of **District** and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:

On behalf of Contractor:

Title

Title

Name

Name

Signature

Signature

Santa Cruz City Schools Facility Services Office

536 Palm Street

Santa Cruz, California 95060

Address

Address

On behalf of Escrow Agent

Title

Name

Signature

Address

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

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

District:

Contractor:

Title

Title

Name

Name

Signature

Signature

End of Section

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DVBE Participation Goal Certification

Per California Education Code. §17076.11

Option 1

CERTIFICATION OF GOOD FAITH EFFORT TO REACH 3% DISABLED VETERAN BUSINESS ENTERPRISES PARTICIPATION

_____ ("**Contractor**") hereby certifies that they have made a good faith effort in order to reach a 3% disabled Veteran Business Enterprise participation in this Project.

The following steps have been taken as part of this Good Faith Effort.

1. Contact was made with the District to identify DVBE's
2. Contact was made with other state agencies with local DVBE organizations to identify DVBE's
3. Advertising was published in trade papers focusing on DVBE's
4. Invitations to bid were submitted to potential DVBE contractors and available DVBE's were considered.

Contractor (Name of firm)

Printed name and Title of Authorized Representative

Signature of Authorized Representative

Option 2

PARTICIPATION GOAL CERTIFICATION

As an alternative to indicating that a Good Faith Effort has been made, _____ ("**Contractor**") hereby certifies that the 3% goal for DVBE participation will be met on this project. Documentation supporting this assertion as indicated on the following page will be provided to the District **prior** to release of final project payment.

Contractor (Name of firm)

Printed name and Title of Authorized Representative

Signature of Authorized Representative

Option 2 (continued)

PARTICIPATION GOAL DOCUMENTATION

Required at completion of Project, Prior to release of final Payment

The following Contractors are state certified DVBE's and participated in this project to the extent listed below:

Contractor	Subcontract Amount
Total DVBE Participation	
Total Contract Amount	
DVBE Participation Percentage	

I certify that the above is a true and correct representation of the Actual Disabled Veteran's Business Enterprise Participation on this Project.

Contractor (Name of firm)

Printed name and Title of Authorized Representative

Signature of Authorized Representative

Date

End of Section

Contractor Background Checks

Per California Education Code. §45125.1 and 45125.2

and

Per California School Board Association Administrative Regulation AR 3515.6 (c)

Certification of Background Check Requirements

The General Contractor shall sign and submit this form to the Santa Cruz City Schools prior to execution of the Contract for Construction. Refer to Specific Conditions, Section 008100, Item 6 "Background Checks"

Attention Santa Cruz City Schools Governing Board:

Neither;

General Contractor (Name of firm)

nor any of our employees, subcontractors or subcontractors' employees who are required by California Education Code section 45125.1 or 45125.2 to submit or have their fingerprints submitted to the Department of Justice and who may have other than limited contact with pupils have been convicted of a felony as defined in California Education Code section 45122.1

By

Representing

Date

End of Section

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See the bid Proposal form for time and location for submitting bids.

Certification of Pre-Qualification

Section 00200: Signed Proposal

Initial

Initial

Initial

Initial

Initial

Initial

Initial

Initial

Printed Name

Section 00 29 00
Required Documents - 1

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Contractor Acknowledgements

By submitting a bid for this project with anticipated execution of the contract for construction, the Contractor Hereby Acknowledges that a promise has been made to the District to provide the labor and materials indicated in herein. Contractor acknowledges that all of these documents are integral components of the Contract for construction:

- Front End (including but not limited to the form of agreement, general, supplemental and specific conditions)
- Technical Specifications
- Drawings
- All Addenda

The following acknowledgements are not meant to supersede or to limit the Contractor's contractual obligation to the District. Contractor is responsible for all items described in the contract documents. The following acknowledgements must be submitted with the contractor's proposal in order to be deemed a responsive and responsible bidder. Not all project requirements are indicated below.

Acknowledgements

Key Requirement	Initial
Contractor has experience managing public school modernization projects on multiple sites simultaneously.	_____
Contractor has made no assumptions that requirements called for in these documents do not apply.	_____
Contractor acknowledges the District's right to self perform work. Contractor will not impede the District should the District decide to perform work with its own forces or via another contractor.	_____
Section 080000: Supplemental General Conditions General Contractor shall submit all waivers to the Architect with each pay request	_____
Section 010000: Project Summary The required completion date is TBD . (or as revised by addendum). By entering into a contract with the District, the contractor acknowledges a complete understanding of the project and anticipates completion of the project on time and without reservation.	_____
The site will be available for a seven (7) day work week.	_____
Inspections or Special Inspections will not be available on weekends	_____
Architect and Owner Rep/Project Manager will not be available for weekend questions or issues.	_____

Key Requirement	Initial
Section 012500: Contract Modification Procedures	
The District has the right to issue construction change directives when Contractor, Architect and District do not agree on an issue. Contractor will oblige the District's right to issue change directives.	_____
General Contractor's overhead and profit markup (including bond charges) shall not exceed 15% of subtotal, and for work performed by subcontractors shall not exceed 5%	_____
In the case where work is done prior to final pricing, General Contractor must submit a Change Request for cost and time for review by the Architect and District within 30 days. If no Change Request is submitted in this time frame, the work is considered to have been completed as part of the base contract work and at no additional cost to the District.	_____
All Change Requests for cost and time related to work completed on a time and material or force account basis must be provided within 30 days of completion of the work. If no Change Request is submitted in this time frame, the work is considered to have been completed as part of the base contract work at no additional cost to the District.	_____
Any work completed on a time and material or force account basis in which a price quote was requested by the Architect or District prior to performing the work and no price was provided must be submitted within 72 hours of completion of the work. If no Change Request is submitted in this time frame, the work is officially considered to have been completed as part of the base contract work at no additional cost to the District.	_____
If the Architect or District requests additional information for a specific Change Request, then the Contractor must submit it within 15 days. If the Contractor fails to respond within 15 days, the Change Request is considered rejected by the District.	_____
Section 012900: Payment Application Procedures	
At the District's discretion, failure to submit a Schedule of Values within seven (7) days after award of contract shall be grounds for dismissal of contract.	_____
Waivers are required from all subcontractors with each pay request.	_____
Section 013100: Project Management and Coordination	
The District has the right to reject a superintendent, project manager or other contractor staff and require replacement with appropriate/acceptable staff. Contractor will oblige the District's right to approve and accept contractor's staffing.	_____
Section 013110: Project Schedules	
Construction may not begin until a schedule has been submitted.	_____
Contractor will submit a preliminary project schedule and contract within the time limits described.	_____
Items on the critical path are items with zero (0) total float time.	_____
Schedule will indicate a fair amount of free float and total float. Submitted schedule will not indicate that all items are Critical.	_____

Key Requirement	Initial
At the District's discretion, failure to submit a Project Schedule within seven (7) days after award of contract shall be grounds for dismissal of contract.	_____
Float time is shared between District and Contractor. Neither shall assume usage of float time without consultation and agreement.	_____
All time calculations will be provided in calendar days.	_____
Any time extension requests due to a change order must be shown to have an effect on a critical path item or to have created a new critical path.	_____
Schedule updates are required to be submitted each month as a condition of receiving payment.	_____
Contractor recognizes the Project Specific Requirements to include 15 calendar days as one final task in the project schedule to be utilized as the equivalent of Free Float and Total Float solely for the District's use.	_____
Contractor recognizes the Project Specific Requirements to include an additional (5) half days of free float to accommodate for District testing shutdowns.	_____
Section 013200: Construction Progress Documentation	
Record Documents are the responsibility of the General Contractor's superintendent.	_____
Record documents shall be kept and updated daily.	_____
Updated record documents are required to be provided each month as a condition of receiving payment.	_____
Section 013300: Submittal Procedures	
Contractor acknowledges that contractor shall review all submittals (including but not limited to shop drawings) prior to submittal to Architect and District Representative. Any submittals forwarded to the Architect and District Representative shall be stamped by the Contractor indicating that the contractor has fully reviewed the associated submittal and that contractor believes that the submittal is in conformance with project requirements. Submittals not reviewed by Contractor prior to submittal will be returned to contractor without review.	_____
Section 013510: Title 24, Part 1: Administrative Requirements	
Contractor recognizes the authority of the Division of the State Architect (DSA) and will perform all work of this project in conformance with DSA requirements.	_____
Contractor shall provide the Project Inspector Access to all areas of construction at any time during the construction period	_____
Section 016300: Product Options and Substitutions	
A submittal schedule will be provided by contractor, indicating a calendar schedule of when submittals will be submitted to Architect, with associated review periods indicated.	_____
Substitution requests must be submitted prior to bid or within 30 days of award of contract.	_____
Substitutions received within 30 days after award of contract will be reviewed – but Contractor	_____

acknowledges that there is no guarantee of acceptance by Architect or District.

Substitution requests submitted later than 30 days after award of contract will only be considered when a product becomes unavailable at no fault of the Contractor.

Contractor acknowledges that substitution submittals that are not clearly marked as such will be summarily rejected.

Substitutions will be submitted with a clear item by item explanation indicating why contractor believes the item is equivalent to a submitted item.

Section 017400: Cleaning

The site must be kept clean at all times on a daily basis. Trash will not be allowed to accumulate on site.

Section 017700: Contract Close Out Procedures

Contractor acknowledges that Occupancy or use by District does not necessarily denote "Beneficial" occupancy. Contractor may still be liable for Liquidated Damages when District occupies the facility while certain project components remain incomplete.

Contractor will not request a substantial completion review until contractor believes that all project components are satisfactorily completed.

Bidder (Signature)

Printed Name

End of Section

Agreement

The following Sections represent the proposed Agreement between Owner and Contractor for this Project.
Included are the following sections:

AIA Form A101

Standard Form of Agreement Between Owner and Contractor

AIA Form A201

General Conditions of the Contract for Construction

AIA Form A312

Performance Bond and Payment Bond

Section 008000

Supplemental Conditions

Section 008100

Specific Conditions

All other Project Manual Sections and Drawings included herein are integral components and are part of the agreement between Owner and Contractor

End of Section

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DRAFT AIA[®] Document A101[™] - 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the [] day of [] in the year []
(In words, indicate day, month and year)

BETWEEN the Owner:
(Name, address and other information)

[Redacted area for Owner information]

and the Contractor:
(Name, address and other information)

[Redacted area for Contractor information]

for the following Project:
(Name, location and detailed description)

| Draft

[Redacted area for Project description]

The Architect:
(Name, address and other information)

[Redacted area for Architect information]

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201[™]-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA[®] Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS
10	INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be [] (\$ []), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price Per Unit

§ 4.4 Allowances included in the Contract Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item

Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the [] day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the [] day of the same month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than [] ([]) days after the Architect receives the Application for Payment. *(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported

by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of (). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ();
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201-2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2007

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

per annum

§ 8.3 The Owner's representative:

(Name, address and other information)

§ 8.4 The Contractor's representative:

(Name, address and other information)

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Title of Specifications exhibit:

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Title of Drawings exhibit:

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- 1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:



- 2 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)



ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond

Limit of liability or bond amount (\$ 0.00)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

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DRAFT AIA[®] Document A201[™] – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Draft

THE OWNER:
(Name and address)

THE ARCHITECT:
(Name and address)

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. 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 Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 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 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

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.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. 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 Architect’s or Architect’s consultants’ reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner 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 Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, 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 Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 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 Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 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, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, 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 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that 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 promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume

the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 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 to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 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 but not in the allowances; and
- .3 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 (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants 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.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be

required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

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

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless 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 or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by 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 or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate For Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; 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 pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 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 and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct 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.

§ 5.1.2 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.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 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 the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect 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, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may

be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

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 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations 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 that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

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

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

the Owner's or separate contractor's 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 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 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, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

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

§ 8.2 PROGRESS AND COMPLETION

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

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

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2., for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 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 suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made 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 CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the 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 The Architect 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 Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an 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 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect,

stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the

Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 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 When use or storage of explosives or 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.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction

of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have 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 or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect 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 uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense 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.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor 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 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole 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.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a 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 mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 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 action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When 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 finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 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.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 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.

§ 14.4.3 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, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an

additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.



DRAFT AIA[®] Document A312[™] - 1984

Performance Bond

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond: ☒ None ☐ See Section 13

CONTRACTOR AS PRINCIPAL
Company: (Corporate Seal)

SURETY
Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY - Name, Address and Telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE

(Architect, Engineer or other party):

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contract, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Section 3.1.

§ 3 If there is no Owner Default, the Surety's obligation under this Bond shall arise after:

§ 3.1 The Owner has notified the Contractor and the Surety at its address described in Section 10 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and

§ 3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Section 3.1; and

§ 3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

§ 4 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or

§ 4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or

§ 4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

§ 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefor to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner citing reasons therefor.

§ 5 If the Surety does not proceed as provided in Section 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 6 After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Section 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

§ 6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

§ 6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 4; and

§ 6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 7 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators or successors.

§ 8 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 9 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 10 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

§ 11 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 12 DEFINITIONS

§ 12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

§ 12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

§ 12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

§ 13 MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

Signature:
Name and Title:
Address:

SURETY

Company: (Corporate Seal)

Signature:
Name and Title:
Address:

DRAFT AIA[®] Document A312[™] - 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

<< >>< >
<< >>

SURETY:

(Name, legal status and principal place of business)

<< >>< >
<< >>

OWNER:

(Name, legal status and address)

<< >>< >
<< >>

CONSTRUCTION CONTRACT

Date: << >>

Amount: \$ << >>

Description:

(Name and location)

<< >>
<< >>

BOND

Date:

(Not earlier than Construction Contract Date)

<< >>

Amount: \$ << >>

Modifications to this Bond: ☐ << >> None ☐ << >> See Section 18

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature:

Name and << >>< >

Title:

(Any additional signatures appear on the last page of this Payment Bond.)

Signature:

Name and << >>< >

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

<< >>
<< >>
<< >>

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

ELECTRONIC COPYING of any portion of this AIA[®] Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

<< >>

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

Signature:

Name and Title: << >>< >

Address: << >

SURETY

Company: (Corporate Seal)

Signature:

Name and Title: << >>< >

Address: << >

Scope of Work Summary/ Milestone Dates

*Note: Contractor shall provide adequate manpower to start and finish the roofs for Mission Hill Middle School, between **June 10th, and August 2nd.***

Gym & Fire Escape Roofs (Base Bid)

Scope of Work: Low Slope Roof Replacement

1. Remove roofing to the structural deck and properly dispose of.
2. Replace any damaged wood, or dry rot wood 'like in kind'.
3. Demo vents, hoods, gutters, pipe jacks, downspouts, etc, and replace.
4. Tack nail HPR Glasbase to wood deck.
5. Mechanically fasten new 0.5" Dens Deck Prime cover board per wind uplift calculations.
6. Install Stressbase 80 in GreenLock Flashing Adhesive at 5 gal/sq,
7. Install KEE Stone 60 mil FB flashings in KEE Foam with 3" ribbons at all flashings.
Install Stressbase 120 in Green Lock Membrane adhesive at 2.5 gal/sq,
8. Install KEE Stone FB 60 mil with 12" ribbons to roof field, and 3" ribbons at flashings.
9. Raise all curbs and penetrations 8" above finished roofing surface. Contactor is responsible for electrical connections.
10. Install new metal coping, gutters, trim, drains, down spouts, etc. from flat stock.
10. Install new internal sump drains at all internal drain locations.
11. Install new Dura Block conduit sleepers with protective roof pad throughout.
12. Water test and clear all roof drains of debris and clogs before project close out.

END OF SECTION

Supplemental General Conditions

Refer to attached documents:

AIA Document A201, General Conditions for the Contract for Construction

The following are conditions of the Contract Documents which are supplemental to the General Conditions for purposes of addition, clarification or deletion. Where the General Conditions and Supplemental General Conditions are in conflict, the latter shall govern. Heading numbers assigned to Supplemental General Conditions generally relate to numbers in the General Conditions.

Article 3 (A201) Contractor

Section 3.5 Warranty

- A. The entire installation shall be warranted free from defects of workmanship and materials for a minimum period of one (1) year. This warranty shall be longer if so specified in elsewhere in the specifications. Warranty period begins after acceptance. Any defects developing during this Warranty period shall be remedied promptly and free of charge. Any associated work required to be removed or replaced in order to correct a found defect shall also be provided free of charge.

Section 3.7 Permit Fees & Notices

- A. Contractor will obtain and pay for all necessary permits, licenses etc, with the exception of the Division of State Architect's fees.

Section 3.13 Use of Site

- A. Construction Barricades: All necessary traffic-control and safety barricading shall be included in this Contract. Contractor must provide a complete separation between students and construction staff at all times.

Section 3.14 Cutting and Patching

- A. Damage to Existing Facilities: Any damage caused by the Contractor in the course of construction to adjacent existing facilities shall be the responsibility of this Contractor. Full repairs shall be made to restore them to the satisfaction of the Architect and/or District Representative and to the condition existing before contractor began construction work, at no expense to the Owner.

Section 3.15 Cleaning

- A. Clean up, rubbish, etc. regularly, and as directed by the District Representative or Architect: The Contractor shall clean the premises of accumulated rubbish, debris, unnecessary appliances, and any other unused rubbish or materials which may constitute an obstruction to the progress of completion of the work whether the same was caused by his work or the work of other crafts. At the completion of the work and as one of the requisites thereof, the Contractor shall remove any and all tools, appliances, rubbish, packing, or debris, etc., of any kind from the building, premises, sidewalks, streets, or adjacent premises; he shall go over all of his work and put the same in perfect order and condition, and in strict accordance with the terms of the contract; and shall repair or replace all damaged, broken or stained parts of his work, whether so injured by his workmen or by anybody else.
- B. All existing adjacent landscaping and turf shall be returned to condition existing before start of construction. Any damage caused by construction vehicles shall be completely repaired.

Section 3.18 Indemnification

- A. Indemnity: The bidder must hold harmless and fully indemnify the District, its Board of Trustees, Officers, employees and agents from all damages, costs or expenses that may at any time arise out of the bidder's performance of, or failure to perform acts, required by the contract documents, including but not limited to, infringement or use of any copyrighted composition secret process, patented or unpatented invention, article or appliance furnished or used in connection with this bid.

Article 5 (A201) Subcontractors

- A. Pursuant to the Subletting and Subcontracting Fair Practices Act, Government Code Section 4100-4114, inclusive, every bidder shall, on the enclosed form set forth in Section 00240 list:
 - 1. The name and location of the place of business of each subcontractor who will perform work or labor or render service to the bidder in or about the work in an amount in excess of one-half (1/2) of one percent (1%) of the bidder's total bid.
 - 2. The portion of the work that will be done by each subcontractor. If the bidder fails to specify a subcontractor for any portion of the work performed under the contract in excess of one-half (1/2) of one percent (1%) of the bidders total bid, bidder agrees that bidder is fully qualified to and will perform that portion of the work.
- B. The successful bidder shall not, without consent of the District, either:
 - 1. Substitute any person as subcontractor in place of the subcontractor designated in the original bid;
 - 2. Permit any subcontract to be voluntarily assigned or transferred or allow the work to be performed by anyone other than the original subcontractor listed in the bid; or
 - 3. Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of the total bid as to which the bidder's original bid did not designate a subcontractor.

Article 6 (A201) Construction by Owner or by Separate Contractors

- A. The School Board reserves the right to let further contracts before the work is completed, and the General Contractor shall cooperate with such separate contractors in the execution and correlation of their work.

Article 7 (A201) Changes in the Work

- A. Work shall be executed strictly in accordance with the approved plans, addenda and change orders. Such addenda and change orders shall be prepared in accordance with Section 4-338, Part I of Title 24 CC.R.

Article 8 (A201) Time

Section 8.2 Progress and Completion

- A. Liquidated Damages: It is mutually agreed by the Owner and the Contractor that, if the Contractor does not complete the Work by the agreed dates as defined in section 01000 and in document A101 Standard Form of Agreement Between Owner and Contractor, it would be impractical to calculate the loss to the Owner caused by such failure. Accordingly, the Owner and the Contractor agree that, if the Contractor fails to complete the work within the agreed time, the Contractor shall pay to the Owner the amount defined herein for every **calendar** day thereafter during which the Work remains uncompleted. This amount shall be presumed to be the amount of damage suffered by the Owner by reason of the failure of the Contractor to complete the Work within the agreed time.
 - 1. Liquidated Damages: One Thousand dollars (\$1000.00) per building per calendar day

Article 9 (A201) Payments and Completion

Section 9.6 Progress Payments

- B. The Owner will make payments on account of the Contract as provided therein against Certificates of the Architect and District Representative as follows:
 - 1. On or about the fifteenth day of each month, ninety- five per cent (95%) of the value based on the Contract prices, of labor and materials incorporated in the Work, and of materials suitably stored at the site thereof, up to the last day of the preceding month, as estimated by the Architect and District Representative, less the aggregate of the previous payments;
 - 2. Upon substantial completion of the entire work, a sum sufficient to increase the total payments to ninety- five percent (95%) of the Contract price.
- C. Waivers: General Contractor shall provide and require all Subcontractors and Vendors to provide the following with each and every pay request as a condition of payment.
 - 1. "Conditional waiver and release upon progress payment" with each Application for Payment as described in California Civil Code Section 3262.
 - 2. Unconditional Waiver and Release for all previously made payments as described in California Civil Code Section 3262.
 - 3. General Contractor shall submit all waivers to the Architect with each pay request.

Section 9.10 Final Completion and Final Payment

- A. Final payment shall become due and payable to the Contractor thirty-five (35) days after a Final Notice of Completion is recorded.
- B. In order to receive Final Payment, General Contractor shall provide and require all Subcontractors and Vendors to provide the following:
 - 1. Unconditional Waiver and Release for all previously made payments as described in California Civil Code Section 3262.
 - 2. General Contractor shall provide and require all Subcontractors and Vendors to provide "Conditional waiver and release upon Final Payment" with Final Application for Payment. The form of this waiver shall be as described in California Civil Code Section 3262.
 - 3. General Contractor shall submit all waivers to the Architect with each pay request.

Article 10 (A201) Protection of Persons and Property

Section 10.2 Safety of Persons and Property

- A. Protection: The General Contractor must exercise special vigilance to protect all work executed under this contract. The Contractor shall be fully aware that the work of this contract will occur in a place of public accommodation and that the premises will be susceptible to vandalism. Contractor shall be responsible for immediate mitigation of all vandalism occurring in the work zone as defined in the Contract Documents. All graffiti shall be removed or covered within 18 hours of discovery.
- B. Vandalism: The Contractor shall be responsible for maintaining security of the Work Zone and prevention of vandalism in the Work Zone during construction. The Contractor shall be responsible for correction of damage to the Work and the Work Zone due to vandalism during construction. The Contractor shall exercise due care in preventing entrance of unauthorized personnel to Work Zone.

Article 10.3 (A201) Hazardous Materials

- A. Asbestos: Contractor shall furnish the District with a letter at the completion of the project stating, "All Materials Installed in accordance with this Specification are Asbestos Free."

Article 11 (A201) Insurance and Bonds

Section 11.1 Contractor's Liability Insurance

- A. The Contractor shall be held responsible for any and all loss, accident, neglect, injury or damage to person, life or property which may be the result of, or may be caused by, his building operations or his execution of the Contract, and for which the Owner might be held liable.
- B. Before commencing any Work under the Contract, the Contractor shall file with the Owner the following insurance policies issued by a company duly and legally licensed to transact business in the State of California. Policies shall be with an A.M. Best rating of no less than A:XL.
- C. Policies shall be issued at the expense of the Contractor and shall be maintained by contractor at contractor's expense during the entire life of the Contract.
- D. Proof of Insurance: Contractor shall not commence work nor shall contractor allow any subcontractor to commence work under this contract until all required insurance and certificates have been delivered in duplicate to and approved by Owner:
- E. Certificates and insurance policies shall include the following clauses:
 - 1. "This policy shall not be canceled or reduced in required limits of liability or amounts of insurance until notice has been mailed to Owner stating date of cancellation or reduction. Date of cancellation or reduction may not be less than thirty (30) days after date of mailing notice."
- F. Certificates of insurance shall state in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date and cancellation and reduction notice.
- G. Contractor shall be solely responsible for:
 - 1. Subcontractors' compliance with insurance requirements
 - 2. Other insurance coverage including, but not limited to loss, theft, fire, property damage, and glass breakage
- H. Compensation Insurance
 - 1. One (1) insurance policy shall be in the form of compensation insurance and shall cover the full liability of the Contractor.
- I. Public Liability and Property Damage Insurance
 - 1. Public liability and property damage insurance shall have the Owner's name in the insurance policy as the insured, as well as the Contractor's.
 - 2. One (1) insurance policy shall be in the form of public liability and property damage insurance, and shall protect the Owner, Contractor, and any subcontractor to him performing work under this Contract, whether such operations be by the Contractor himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The amounts of insurance shall be as follows:
 - (a) Public Liability: Not less than \$1,000,000 limit for each occurrence
 - (b) Property Damage: Not less than \$1,000,000 limit for each occurrence

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- J. Commercial General Liability Insurance
 - 1. Combined Single Limit: \$2,000,000
 - 2. Product Liability and Completed operations \$1,000,000
 - K. Automobile Liability
 - 1. Combined Single Limit \$1,000,000
 - L. Employer's Liability
 - 1. \$1,000,000
 - M. Builders Risk (Course of Construction)
 - 1. Issued for the value and scope of work indicated herein.
 - N. Workers Compensation
 - 1. Statutory limits pursuant to State Law
 - 2. In case any work is sublet, the General Contractor shall require the subcontractor similarly to provide Workers Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the General Contractor.
 - 3. In case any class of employees engaged in hazardous work under this Contract at the site(s) of the project is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate insurance for the protection of his employees not otherwise protected.
 - O. Vandalism Insurance: The Owner's insurance policy does not cover vandalism. The Contractor will be responsible for providing coverage under required Insurance to provide for the repair of damaged property caused by Vandalism.

Section 11.4 Performance Bond and Payment Bond

- A. Before commencing any work under the contract, the Contractor shall file two (2) bonds with the Owner. These bonds shall be in the amounts and for the purposes specified below. They shall be surety bonds, shall be issued by corporations duly and legally licensed to transact business in the State of California and approved by the Owner. They shall be issued at the expense of the Contractor; and shall be maintained by him and at his expense during the entire life of the Contract.
- B. Payment Bond:
 - 1. A Payment Bond shall be provided in the amount of one hundred per cent (100 %) of the Contract price, and shall be in accordance with the laws of the State of California to secure the payment of all claims for labor and materials used or consumed in the performance of this Contract.
 - 2. Authority: Section 3247 of California Public Contract Code
 - 3. Form: AIA Form A312, Included herein
- C. Performance Bond:
 - 1. A Performance Bond shall be provided in the amount of one hundred per cent (100%) of the contract price, and shall guarantee the faithful performance of the Contract and shall insure the Owner during the life of the contract and for the term of one (1) year from the date of acceptance of the work against faulty or improper workmanship or materials that may be discovered during that time.
 - 2. Form: AIA Form 312, Included herein

Article 13 (A201) Miscellaneous Provisions

- A. Compliance with California Regulations: All work performed under this contract shall comply in every respect to the rules and regulations of all agencies having jurisdiction for this classification of construction and design. All work shall conform to the most current versions of the following:
 - 1. California Code of Regulations - Title 24, parts 1 and 2
 - 2. California Code of Regulations - Title 19
 - 3. California Public Contract Code
 - 4. California Mechanics Liens and Stop Notice statutes
 - 5. California Labor Code
 - 6. California Education Code
- B. The General Contractor shall provide and keep a copy of California Code of Regulations (CCR) Title 24, Parts I and II available in the field during construction.

Section 13.1 Governing Law

- A. Governing Law and Venue: In the event of litigation, the bid documents, specifications and related matters shall be governed by and construed in accordance with the laws of the State of California. Venue shall be with the appropriate state or federal court located in Santa Clara County.
- B. Prevailing Law: In the event of any conflict or ambiguity between these instructions and state or federal regulations, the latter shall prevail. Additionally, all equipment to be supplied or services to be performed under the bid proposal shall conform to all applicable requirements of local, state, and federal law.

Article 15 (A201) Claims and Disputes

Section 15.4 Arbitration

- A. In addition to requirements described in this section all claims of \$375,000 or less which arise between the contractor and the local agency shall be subject to the settlement and arbitration provisions set forth in Public Contract Code Sections 20104 through 20104.8 which provisions are incorporated herein by this reference.

Article 16 Supplemental Provisions

16.1 Assignment

- A. The Contractor shall not assign or transfer by operation of law or otherwise any or all of its rights, burdens, duties or obligations without the prior written consent of the District

16.2 Binding Effect

- A. This Agreement shall inure to the benefit of and shall be binding upon the Contractor and District and their respective successors and assigns.

16.3 Severability

- A. If any provision of this Agreement shall be held invalid or unenforceable by a court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

16.4 Amendments

- A. The terms of the Contract Documents shall not be waived, altered, modified, supplemented or amended in any manner whatsoever except by written agreement signed by both parties.

16.5 Governing Law

- A. This Agreement shall be governed by and construed in accordance with the laws of the State of California and venue shall be in the appropriate Superior Court in Santa Clara County, California.

16.6 Clayton Act and Cartwright Act

- A. Pursuant to 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 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.

16.7 Labor Code Application

- A. 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.
- B. 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.

16.8 Trench Excavation

- A. 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.

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- B. 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.
 - C. 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.
 - D. 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.

16.9 Audit

- A. Pursuant to and in accordance with the provisions of Government Code section 8546.7, or any amendments thereto, all books, records, and files of the 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 final payment is made 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 final payment is made under this Contract, Owner shall also have the right to such an audit, and Contractor must cooperate by producing all information requested within seven (7) days.

16.10 Existing Utility Lines; Removal, Relocation

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

Section 16.11 Violation of Labor Code

- A. Pursuant to Labor Code section 1777.7, in the event a Contractor or Subcontractor willfully fails to comply with the provisions of this paragraph 13.10 and Labor Code section 1777.5:
 - 1. The Chief of the Division of Apprenticeship Standards 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 contract 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 violations. Each period of debarment shall run from the date the determination of noncompliance by the Chief becomes a final order of the Administrator of Apprenticeship.
 - 2. 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. Notwithstanding section 1727, upon receipt of a determination that a civil penalty has been imposed, the awarding body shall withhold the amount of the civil penalty from the contract progress payments then due or to become due.
 - 3. In lieu of the penalty provided for in this subdivision, the Chief may for a first time violation and with the concurrence of an 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.
 - 4. Any funds withheld by the awarding body pursuant to this section shall be deposited in the General Fund if the awarding body is a state entity, or in the equivalent fund of an awarding body if the awarding body is an entity other than the state.
 - 5. The interpretation and enforcement of section 1777.5 and this section shall be in accordance with the regulations of the California Apprenticeship Council.
 - 6. Pursuant to Public Contract Code section 6109, no contractor may perform work on a public works project with a subcontractor who is ineligible to perform work on the project pursuant to sections 1777.1 or 1777.7 of the Labor Code.

16.12 Written Notice

- A. 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."

16.13 Entire Agreement

- A. This Agreement sets forth the entire understanding of the Parties relating to the transactions it contemplates, and supersedes all prior understandings relating to them, whether written or oral. There are no obligations, commitments, representations or warranties relating to them exception those expressly set forth in this Agreement.

16.14 Execution of Other Documents

- A. The parties to this Agreement shall cooperate fully in the execution of any and all other documents and in the completion of any additional actions that may be necessary or appropriate to give full force and effect to the terms and intent of this Agreement.

16.15 Execution in Counterparts

- A. This Agreement may be executed in multiple counterparts and by facsimile, each of which shall be deemed an original, and counterpart signature pages may be assembled to form a single original document.

16.16 Warranty of Authority

- A. By signing below, each of the signatories represents and warrants that he or she has been duly authorized to execute this Agreement on behalf of the party on whose behalf he or she is signing.

End of Section

Specific Conditions

The following are conditions of the Contract Documents, which are Specific to the Project, District or Regulatory Jurisdiction in which the work of the Project will be performed.

1. Anti-Discrimination

It is the policy of the District that in connection with all work performed under contracts, there will be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, or marital status. The Contractor agrees to comply with applicable federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Labor Code Section 1410, and Labor Code Section 1735. The contractor shall require like compliance by any subcontractor employed on the work.

2. Worker's Compensation

In accordance with the provisions of Section 3700 of the Labor Code, Contractor shall secure the payment of compensation to his employees. Contractor hereby acknowledges the following statement:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's 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 the Contract Documents."

3. Evidence of Responsibility / Certificate of Prequalification

As a condition of bidding and in accordance with the provisions of Section 20111.5 of the California Public Contract Code, prospective bidders are required to submit to the District a completed prequalification questionnaire and financial statement. The District will provide prequalified bidders with a Certificate of Prequalification. This certificate is considered satisfactory evidence in order for the district to establish the bidder's financial resources, the bidder's experience in the type of work required by the District, the bidder's organization available for the performance of the contract and any other required evidence of the bidder's qualification to perform the proposed contract. Failure to be prequalified as described in section 001000 shall result in rejection of the bid.

4. Submittal of Certified Payroll

Contractor shall be required to submit certified payroll monthly as a condition of payment. Certified payroll will be kept in District records. District is not providing a Labor Compliance Program.

5. Disabled Veteran Business Enterprises (DVBE) Requirements

In accordance with Education Code Section 17076.11, The District has a participation goal for Disabled Veteran Business Enterprises of at least 3% per year.

All contractors bidding on this project are required to make a good faith effort to achieve this 3% participation goal. The successful bidder must demonstrate "good faith effort" by submitting documentation of all of the following actions which are pursuant to CSBA Administrative Regulation 3312.11(a)

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1. Contact was made with the District to identify DVBE's
 2. Contact was made with other state agencies with local DVBE organizations to identify DVBE's
 3. Advertising was published in trade papers focusing on DVBE's
 4. Invitations to bid were submitted to potential DVBE contractors and available DVBE's were considered.

A DVBE Participation Goal Certification is included in Section 002700 and is a required document for submittal with bids.

6. Background Checks

Pursuant to California School Board Administrative Regulation 3515.6 (c) and California Education Code (CED) Section 45125.2 (a) A school district contracting with an entity for the construction, reconstruction, rehabilitation, or repair of a school facility where the employees of the entity will have contact, other than limited contact with pupils shall ensure the safety of the pupils by one or more of the following methods:

1. The installation of a physical barrier at the worksite to limit contact with pupils.
2. Continual supervision and monitoring of all employees of the entity by an employee of the entity whom the Department of Justice has ascertained has not been convicted of a violent or serious felony. For purposes of this paragraph, an employee of the entity [shall] submit his or her fingerprints to the Department of Justice pursuant to subdivision (a) of Section 45125.1 and the department shall comply with subdivision (d) of Section 45125.1
3. Surveillance of employees of the entity by school personnel with District Approval.

The General Contractor's Project Superintendent or another person specially designated to be on site at all times during which construction operations will take place may be deemed to be an appropriate employee, as referred to in item 2 above upon concurrence by District.

Pursuant to California Education Code (CED) Section 45125.2 (b) an entity that contracts with a school district for the construction, reconstruction, rehabilitation, or repair of a school facility is not required to comply with the requirements of Section 45125.1 if one or more of the methods described in subdivision (a) is utilized.

Regardless of the above requirements and associated exceptions,

The District requires that in all cases where the following applies:

- Employees of the contractor, its subcontractors or its vendors will have the necessity to travel outside the fenced work zone or from one fenced work zone to another fenced work zone

or

- Employees of the contractor, its subcontractors or its vendors will have the necessity to provide work outside the fenced work zone

The General Contractor must provide as a minimum Option 2 as described above.

Further, regardless of the above requirements and associated exceptions, the General Contractor shall complete and sign the "Background Checks for Contractors" form provided under Section 0028 prior to and as a condition of execution of the Contract for Construction. Submit this form with Executed contract.

End of Section

Project Summary

Part 1. General

1.01 Related Documents

- A. Refer to Division 1 Sections for other requirements not included herein. Sections with the most restrictive language shall take precedence.
- B. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- C. Parts 1,2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- D. All California Prevailing Wage Laws apply to the work of this section.

1.02 Information Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.
 - General Project Description
 - Specific Components
 - Project Information
 - Contract Method
 - Schedule
 - Owner Occupancy

1.03 General Project Description

- A. Work of this Contract comprises general site construction and alterations including site plumbing and site electrical work.

Item	Description
General Components	<ul style="list-style-type: none"> • Demolition of roofing membrane system and flashing. • Repair damaged roof sheathing, exterior wall finishes, • Repair overflows, vents, conduit, and rigid insulation • Install 60 Mil single ply roofing system • Install all required flashing, counter-flashing, curbs, caps • Install overflows, scuppers, roof drains, downspouts, gutters • Remove and replace HVAC ductwork mounting

- B. Work shall not be limited to the items mentioned above but shall include all components necessary to provide for full and beneficial occupancy of the work area and full function of all systems.

1.04 Site Specific Components

- A. The following project components are listed for clarity but do not represent the extent of special considerations that may be included in these Specifications. The Contractor shall remain responsible for provision of all labor and materials listed elsewhere.
 1. Work period occurs while portions of the areas may be occupied.
 2. District may stipulate specific times for parking disruptions.

1.05 Assignment of Components

- A. All work of this Contract is the responsibility of the Contractor.
- B. Work of the Contract is specified in various specifications by CSI division. In some cases various components of related work may be specified across several sections of these specifications.
- C. No attempt can be assumed to have been made to assign work by a particular section of these specifications. The Contractor shall assign work according to his best assessment of a strategy for successful completion of the project.
- D. The contractor shall insure that sub-contractors have access to, or are made aware of, the entire Contract Document for establishment of their sub-responsibilities.
- E. It is the sole responsibility of the Contractor to assign work to various trades and sub-contractors. It is NOT the responsibility of the Architect or these specifications to determine which trades perform selected work.
- F. The Contractor shall be responsible for completion of all work regardless of which specifications section may describe that work.
- G. Work that is required herein, but is not performed by a sub-contractor shall be performed by the Contractor.

1.06 Project Information

- A. The Contractor shall utilize the following contacts for Project Communication:

Architect	Bartos Architecture
	Mark Bartos, Architect: Architect of Record
	Neal Sellers, Architect: Senior Project Manager
	Phone 650 340 1221

District	Santa Cruz City School District
	Trevor Miller, Director of Facility Services
	Phone 831 429 3904

1.07 Contract Information

- A. Construct the work under a single lump sum contract.
- B. Provide Alternates as may be indicated elsewhere.
- C. Provide Unit costs as may be indicated elsewhere
- D. Only items noted "NIC" (Not In Contract) or "By District", will be furnished and installed by Others.

1.08 Schedule

- A. Work done under this contract shall be bound by the following dates: Refer phasing plan included with drawings.

Construction Start Date

TBD

Date of Substantial Completion

TBD

- B. Contractor will have site access 7 days per week.**

1.09 Owner Occupancy

- A. Owner will fully occupy adjacent premises for the conduct of normal operations. Contractor shall cooperate with Owner to minimize conflict, and to facilitate Owner's operations.
1. Owner shall provide alternate parking locations for duration of project.
 2. Contractor shall provide control of Work Zone to prevent parking by public.
- B. Provide all necessary temporary utility connections including, but not limited to:
1. Water
 2. Sewer
 3. Electricity
- C. Shut downs shall be coordinated with the District at least one week in advance. Once a date and time period has been determined in consultation with the District, Inspector and Architect; Contractor shall notify all of these parties in writing of the shut down schedule.
1. Refer to Division 01140: Work Restrictions section for other requirements.

Part 2. Products

- A. Not Used

Part 3. Execution

- A. Not Used

End of Section

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Work Restrictions

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1,2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Information Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.
- B. This section describes construction operations, temporary construction facilities, temporary controls, including

Item General

Description

- Contractor Use of premises
- Work Zone
- Construction Staging
- Construction Parking
- Cleaning during construction
- Shutdowns

- C. *The intent of this section is to insure that the occupants are protected to the maximum extent possible, and that inconvenience to the occupants is minimized.*
- D. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References

- 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's "Temporary Electrical Facilities."
- Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.

Part 2. Requirements

2.01 Contractor Use of Premises

- A. Site access shall occur at designated locations and times. Site access locations are shown in the drawings. The owner may place limitations on the size and type of equipment allowed on site due to safety or durability issues. Modifications of site access locations shall be coordinated with the Owner.
- B. Meet all requirements of Specific Conditions Paragraph 6 "Background Checks"
- C. Contractor shall coordinate the use of the project site with other contractors who may be engaged in concurrent work on this site.
- D. Work zone limits shall accommodate the ongoing operation of the school by the Owner. All passage ways shall remain clear and unobstructed for emergency egress as well as routine circulation.
 - 1. Students will be present during the Construction period. Students will be restricted to access from other portions of the site and shall not be allowed access through the Work Zone. The Contractor shall be responsible to prevent access through the Work Zone.
- E. Contractor shall limit access of construction personnel to areas inside the Work Zone.
 - 1. Access outside the Work Zone shall be available only for tasks specifically related to the work of this Contract.
 - 2. Direct supervision of all personnel shall be provided for all tasks performed outside the limits of the Work Zone.
 - 3. Construction personnel shall not have access to areas outside the Work Zone for breaks, toilet use or any other non-construction related use.

2.02 Work Zone

- A. Contractor shall restrict construction activities to the area of construction within the area of the site as shown on the Drawing. This area shall be defined as the Work Zone.
- B. The Work Zone shall include the area of work specifically defined in the Contract Documents as well as a reasonable extent of area adjacent for access required, movement and installation operations.
- C. The Work Zone is defined in the Contract Documents and shall include interior areas of buildings, exterior areas where exterior work occurs and exterior access areas.
- D. The Work Zone shall be fully enclosed by Construction Fencing and shall be locked and inaccessible to the public.
- E. When fully supervised the Work Zone area may be unlocked during regular construction hours to permit access by workers under the control of the General Contractor.
- F. The Contractor is fully responsible for control of the work zone and for the prevention of access by the public.
 - 1. Employees of the School Site, Students and Parents shall be prevented from accessing the Work Zone.
 - 2. The Contractor retains the right to remove any person from the Work Zone who is not specifically associated with the Work of this project.
 - 3. Contractor shall coordinate with District and Architect in order to designate a route of work access from exterior Staging Area to interior work area to be reserved for use by the Contractor. This route may change for various phases of the work, therefore coordinate with Architect and Owner for approval of proposed path.

2.03 Construction Staging

- A. Construction Staging Areas shall be coordinated with District prior to construction. Refer to Architect.
 - 1. Contractor shall provide a complete physical/ visual barricade between staging site and work zone. Workers must be separated from students. Phasing Diagrams provided herein do not include all fencing for the project.
- B. Contractor, sub-contractors, suppliers and all other entities working under the control of the General Contractor shall utilize staging areas and access points as shown.
- C. Contractor shall restrict storage to the interior construction areas or in secured exterior staging areas as designated on the plans or as directed by the District or Architect.
- D. Staging areas shall include equipment and material stockpiles, on-site assembly areas not occurring within the Work Zone, parking and all other construction related tasks.
- E. Staging areas shall be fully enclosed with Construction Fencing and shall be locked and inaccessible by the public.
- F. When fully supervised, staging areas may remain unlocked during regular construction hours.
- G. Alterations to staging areas shall be coordinated with the Architect. Coordination shall occur at such time so as to allow the owner a minimum of 1 week notice prior to alteration of a staging area.
- H. Staging areas shall include Caution signage. To be provided by contractor.
- I. Security of the staging area is the sole responsibility of the General Contractor.

2.04 Construction Parking

- A. Construction Parking Areas shall be coordinated with District prior to construction. Refer to Architect.
- B. Construction parking areas shall be marked and barricaded by the Contractor using barricades as defined elsewhere in this Section.
- C. Additional parking may be obtained when necessary. The Contractor shall coordinate with the Architect at such time as to allow a minimum 1 week notice to the Owner for changes to existing parking areas.

2.05 Cleaning During Construction:

- A. Control accumulation of waste materials and rubbish. Dispose of construction debris and waste off-site at regular intervals. Debris shall be stored in closed containers out of view from the public. Debris shall not be accessible by the public.
- B. Portions of building where construction work occurs within an area occupied for use by the District shall be cleaned by the Contractor on a daily basis so that the degree of cleaning matches adjacent areas which are maintained by Owner janitorial staff.
- C. Required exits must remain clear at all times during business hours.

2.06 Utility Shutdowns

- A. Planned Disruptions/Shutdowns
 - 1. Any work that requires planned shut-down of plumbing, electrical or other service to occupied buildings, or to the entire campus, shall be done after hours or on weekends.
 - 2. Contractor shall make diligent effort to investigate extent of impact of shutdowns based on review of the following:

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- (a) Existing documents showing immediate and adjacent structures and systems.
 - (b) Physical observation in consultation with the District Contact and Architect to review source of utilities, branch locations or other such circumstance that may result in shutdowns of areas outside the work zone.
 - 3. All planned Utility Disruptions/Shutdowns shall be fully coordinated with the District and the Site Staff prior to occurrence. It is the SOLE responsibility of the General Contractor to comply with this requirement. Utility Shutdown requests will not be coordinated via the Architect, but the Architect must be copied by Contractor on all communications with District contact.
 - (a) A utility Disruption Request form will be provided by the District to the Contractor at the Pre-construction conference.
 - (i) Disruption Request form shall be utilized for all Utility Shutdown requests. Request shall be submitted a minimum of **Seven (7) Days** prior to the planned shutdown.
 - (ii) Disruption Request form shall be submitted to the District Contact noted above.
 - (iii) No planned Disruptions/Shutdowns shall occur until contractor has received approval of request from District contact.
 - (iv) Any Disruptions/Shutdowns or utility failures resulting from the work of this contract and where notification was not adequate will cause the District to assess the contractor for damages.
 - (b) Such assessment shall occur in the form of a deductive change order.
 - B. Accidental Disruptions/Shutdowns
 - 1. In the event that Utilities are accidentally disrupted by Contractor, Contractor shall within one (1) hour notify District contact and Architect of incident.
 - (a) Contractor shall provide a plan for re-establishment of disrupted utilities to the District Contact and Architect prior to the close of the work day of the day the incident occurred.
 - (b) If Contractor fails to notify District and Architect as described above, damages of \$1000.00 per day will be assessed for each day that the disrupted utilities are not restored. Amount to be deducted from final payment
 - (c) When District and Architect mutually agree that Contractor would have been able to avoid such disruption with proper supervision, damages of \$1000.00 per day will be assessed for each day that the disrupted utilities are not restored. Amount to be deducted from final payment
 - (d) Damages in items (b) and (c) above are cumulative where both conditions exist.
 - 2. If Contractor properly notifies District as indicated above and it is determined that the Contractor could not avoid disruption, no damages will be assessed. Contractor will be compensated for Material and Labor in this case. Contract time extension and associated compensation will only be provided if task is proven to be on Critical Path by Contractor, within seven (7) days of occurrence.

2.07 Site Communications

- A. All communication with School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent Community or Public shall be initiated by the Architect or the District Contact.
- B. The Contractor or any Sub-Contractors shall not review the content of any Project meeting with School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent

Community or Public or any other persons not either present at the subject meeting or working under the control of the Contractor.

- C. The Contractor shall not advise School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent Community or Public regarding project progress, nor shall the Contractor take direction from any person other than the Architect or the District Contact unless specifically instructed to do so by the Architect or the District Contact.
- D. In no case shall the Contractor modify the Work of the Project based on the direction of any person other than the Architect.

Part 3. Execution

- A. Not Used

End of Section

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Contract Modification Procedures

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
General	<ul style="list-style-type: none"> • Modification Methods • Change Proposals • Change Orders • Required Documentation • Authorization • Document Update

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.
- C. *Construction change procedures described here are contractual requirements. These procedures are essential to facilitate fair and objective processing of additional cost and time incurred on the project. Following and understanding these procedures will simplify the District's review process when determining approval of additional costs and time. If these procedures aren't followed it will result in a less efficient review and approval process.*

1.03 Definitions

Architect's Supplemental Instructions (ASI): (Also referred to as a "Bulletin") A written order, instructions, or interpretations, signed by Architect making minor changes in the Work not involving a change in Contract Sum or Contract Time.

Proposal Request (PR): (AIA Document G709) A written request by the Architect requesting a proposal by the General Contractor for a change in the contract sum or time for a given change to the scope of work.

Proposal: A written description by the Contractor of changes in the contract sum or time due to changes requested by the Architect in the Proposal Request.

Contractor's **Change Order Request (COR):** A written request by the Contractor requesting that a change in the contract sum or time be considered by the Architect and District due to some change to the scope of work.

Authorization: Authorization by the District and Architect to proceed with the designated changes to the scope of work.

Change Order: (AIA Document G701) A written instrument prepared by the Architect and signed by the District, Contractor and Architect stating their agreement upon all of the following

- A change in the work
- The amount of the adjustment in the Contract Sum, if any
- The extent of the adjustment in the contract time, if any

A Proposal Request and Contractor's Change Proposal ARE NOT CHANGE ORDERS.

Construction Change Directive: (AIA Document A714) A written order prepared by the Architect and signed by the District, Architect and Contractor, directing a change in the Work and stating a proposed basis for adjustment, if any in the Contract. A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

By signing the Agreement between District and Contractor, The Contractor acknowledges that the issuance of a Construction Change Directive by District and Architect is a contractual right afforded to the District which the Contractor is obliged to honor.

Part 2. Requirements

2.01 Not Used

Part 3. Execution

3.01 General

- A. Contractor shall proceed promptly to implement Proposal submittal based on Proposal Requests from the Architect.
 1. Provide full written data required to evaluate changes.
 2. Maintain detailed records of work done on a time-and-material/labor force account basis.
 3. Provide full documentation to the Architect upon request.
- B. Designate in writing the member of the Contractor's organization:
 1. Who is authorized to accept changes in the Work
 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. District will designate in writing the Architect as the person who is authorized to execute Change Orders.

3.02 Procedures for Initiating Contract Modifications

- A. Modifications to the Contract sum or time may be initiated via the following methods:
 1. District, through the Architect, may initiate changes by submitting a **Proposal Request** to the Contractor. Request will include:

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- (a) Detailed description of the Change, Products and location of the change in the Project.
 - (b) Supplementary or revised Drawings and Specifications.
 - (c) The projected time span for making the change, and a specific statement as to whether overtime work is to be included in the work.
 - (d) A specific period of time during which the requested price will be considered valid.
 - 2. Contractor may initiate changes by submitting a written **Change Proposal** to the Architect containing:
 - (a) Description of the proposed changes.
 - (b) Statement of the reason for making the changes.
 - (c) Statement of the effect on the Contract Sum and the Contract Time.
 - (d) Statement of the effect on the work of separate sub-contractors.
 - (e) Documentation supporting any change in Contract Sum or Contract Time, as appropriate.
 - B. Changes to the work shall not proceed until and unless Authorization is granted by the District and Architect.

3.03 Construction Change Directive

- A. In lieu of Proposal Request, the Architect may issue a Construction Change Directive for the Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. District and Architect will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes. DSA must approve all changes prior to proceeding.
- D. Contractor will sign and date the Construction Change Authorization to indicate agreement with the terms therein.

3.04 Documentation of Proposals and Claims

- A. Support each price quotation and for each unit price, which has not previously been established, with sufficient substantiating data to allow Architect and/or District Representative to evaluate the price quotation.
- B. On request provide additional data to support time and cost computations:
 - 1. Labor required.
 - 2. Materials required.
 - (a) Recommended source of purchase and unit cost.
 - (b) Quantities required.
 - 3. Taxes, insurance and bonds.
 - (a) Insurance and bonds shall be inclusive of the contractor's overhead and profit markup
 - 4. Credit for work deleted from Contract, similarly documented.
 - 5. Overhead and profit.
 - (a) General Contractor's overhead and profit markup (including bond charges) shall not exceed 15% of subtotal, and

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- (b) For work performed by subcontractors shall not exceed 5%
 - (c) Whoever performs the work gets 15%. All tiers above get 5%
 - 6. Justification for any change in Contract Time.
 - (a) Mobilization charges are not considered when the contractor's tools and equipment are still onsite.
 - 7. Storage and Delivery required.
 - 8. Overtime required.
 - C. All changes shall include
 - 1. Labor required.
 - D. Support each claim for additional costs, and for work done on a time-and-material/labor force account basis, with documentation as required for a lump-sum proposal, plus additional information:
 - 1. Name of the representative of the District or Architect who ordered the work, and the date of the order.
 - 2. Dates and times work was performed, and by whom.
 - 3. Time record, summary of hours worked, and hourly rates paid.
 - 4. Receipts and invoices for:
 - (a) Equipment used, listing dates and times of use.
 - (b) Products used, listing of quantities. Storage time and delivery charges
 - (c) Subcontracts.
 - (d) Document requests for substitutions for Products as specified in Section 01630.
 - E. Tool and Equipment rental: No payment will be made for the use of tools which have a replacement value of \$100 or less.
 - 1. Regardless of ownership, the rates to be used in determining rental costs shall not exceed listed prevailing rates at local equipment rental agencies at the time the work is performed.
 - 2. Tools already located on site as part of the contracted work shall not incur additional surcharge rental rates beyond a daily extended use rate.
 - 3. Rental rates paid shall include all incidental costs including fuel, maintenance, oil, supplies, storage, insurance, etc.
 - 4. Delivery and off haul rates shall apply provided the tools are not already located on site. Equipment shall be returned when no longer in use unless determined the Contractor elects to retain such equipment on site at no expense to the Owner.

3.05 Timeliness of Change Orders

A. *Claims submitted beyond the time frame indicated herein are not valid:*

- 1. *For any Change Request, the cost must be provided prior to the work occurring unless previously approved by the Architect or Owner.*
 - (a) *In the case where work is done prior to final pricing, General Contractor must submit a Change Request for cost and time for review by the Architect and District within 30 days. If no Change Request is submitted in this time frame, the work is considered to have been completed as part of the base contract work and at no additional cost to the District.*

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2. *All Change Requests for cost and time related to work completed on a time and material or force account basis must be provided within 30 days of completion of the work. If no Change Request is submitted in this time frame, the work is considered to have been completed as part of the base contract work at no additional cost to the District.*
 3. *Any work completed on a time and material or force account basis in which a price quote was requested by the Architect or District prior to performing the work and no price was provided must be submitted within 72 hours of completion of the work. If no Change Request is submitted in this time frame, the work is officially considered to have been completed as part of the base contract work at no additional cost to the District.*
 4. *If the Architect or District requests additional information for a specific Change Request, then the Contractor must submit it within 15 days. If the Contractor fails to respond within 15 days, the Change Request is considered rejected by the District.*

3.06 Preparation of Change Orders

- A. Upon formal or informal Authorization of a Proposal the Architect will prepare each Change Order for the District and Contractor's review and signature.
- B. It is mutually agreed and understood that Change Orders may include the summation of multiple Proposals that have been authorized by the District and Architect.
- C. Form: Change Order: AIA Document G701.
- D. Content of Change Orders will be based on either:
 1. Proposal Request and Contractor's responsive Proposal as mutually agreed upon between District and Contractor.
 2. Contractor's Change Proposal for a change, as recommended by Architect or District Representative.
- E. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- F. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
 1. For revisions to contract time, refer elsewhere in Division 1 for Schedule and calculation methods for revisions to schedule. Contractor shall document proposed Schedule revisions per the requirements of the Schedule Section of these Specifications.
- G. District and Architect will sign and date the Change Order as authorization for the Contractor to proceed with the changes. DSA must approve all changes prior to proceeding.
- H. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

3.07 Correlation with Contractor's Submittals

- A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule as described in Schedule specification section elsewhere in Division 1, to reflect each change in Contract Time.
 1. Revise sub-schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

End of Section

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Payment Application Procedures

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
General	Procedures Forms Methods

- B. *This section describes the procedures and steps to be followed to receive payment for work performed and materials supplied to the project. Following these procedures will result in a timely payment period. If these procedures aren't followed, payment will potentially be delayed.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.

Item	Description
Schedule of Values	• Schedule of Values
Payment Applications	• AIA form with updated Schedule of Values
Project Schedule	• Updated Project Schedule
Lien Releases	• Conditional Waivers from all subcontractors, and Unconditional Waivers from all subcontractor for previously submitted payment application

Part 2. Requirements

2.01 Schedule of Values

- A. Prepare a schedule of values to be used as a basis for all Progress Payments and disputes.
 1. Submit a typed schedule of values on AIA Form G703, or approved equal type form.
 2. Submit schedule of values for Architect's Review, within three (3) Days after award of contract.
 3. The first pay request shall not be considered the schedule of values.

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- B. Schedule of Values shall include enumeration of all items to be invoiced to the Contract.
1. Schedule of Values shall represent actual amounts based on project estimates and sub-contract amounts.
 - (a) Schedule of Values shall not be "front-loaded". Architect may reject Schedule of Values (and potentially delay Application for Payment) based on inappropriate values for initial project tasks.
 - (b) Rejection of Schedule of Values for this reason shall not constitute a basis for delay claim by the Contractor.
 2. Schedule of Values shall include representation of all Sub-Contractor amounts so that Payment Applications may be correlated with actual Sub-Contractor progress when necessary. Lump Sum amounts for subcontractors will not be accepted.
 3. Schedule of Values shall include all substantial material / product amounts and all General Conditions amounts so that Payment Applications may be correlated with actual project progress when necessary.
- C. Include as an attachment a list of every subcontractor or supplier to be employed on the project with corresponding subcontract amounts. This Attachment shall include the following:
1. Subcontractor / Supplier Name, Address, Phone Number, Fax Number, Contact person
 2. Subcontractor license number and type of license
 3. Subcontractor / Supplier Scope of Work

2.02 Submittal of Certified Payroll

- A. Contractor shall be required to submit certified payroll to the District monthly as a condition of payment. Certified payroll will be kept in District records. District is not providing a Labor Compliance Program.

2.03 Payment Application Format And Data Required:

- A. Submit itemized applications typed on AIA Document G702, Application and Certificate for Payment, and Continuation Sheets G702A.

2.04 Preparation of Payment Application for Progress Payments

- A. Application Form:
1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 3. Execute certification with signature of a responsible officer of Contract firm.
- B. Continuation Sheets:
1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
 2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
 3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
 - (a) List by Change Order Number, and description, as for an original component item of work.
- C. Waivers
1. Waivers are required from all subcontractors with each pay request.

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2. Refer to 00800- **Article 9 (A201) Payments: 9.10.B Waivers**

2.05 Substantiating Data for Payment Application

- A. When the District or the Architect requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
1. Project.
 2. Application number and date.
 3. Detailed list of enclosures.
 4. For stored products:
 - (a) Item number and identification as shown on application.
 - (b) Description of specific material.
 - (c) Proof of title transfer to District upon payment
 - (d) Proof that off site location is fully bonded for protection of stored material.
- B. Submit one copy of data and cover letter for each copy of application.

2.06 Preparation of Final Payment Application

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting.
- C. General Contractor shall provide and require all Subcontractors and Vendors to provide "Conditional waiver and release upon Final Payment" with Final Application for Payment. The form of this waiver shall be as described in California Civil Code Section 3262
- D. Provide Unconditional Waiver and Release for all previously made payments.
- E. Upon receipt of application for final payment, Architect will make a determination as to whether or not all requirements are in proper order as required by other Sections of this Specification. When all requirements have been provided, Architect will issue a Final Certificate of Payment.
- F. Refer to Project Closeout and Completion Sections for additional requirements.

2.07 Submittal Procedure

- A. Submit Payment Applications to Architect at the times stipulated in the Agreement.
- B. Copies:
1. (3) Three copies of each Application.

2.08 Conditions

- A. Approval of Application for Payment shall be contingent on the following:
1. Submittal of supporting data required elsewhere in the Specifications
 2. Review and acceptance of Construction Progress Documentation specified elsewhere in Division 1.
 - (a) This includes but is not limited to, Updated total Project Schedule.
 3. Review and acceptance of Construction Progress.
 4. Fulfillment of requirements of Pay Application Meeting defined elsewhere in Division 1.
- B. Refer to Division 1 for other requirements related to processing and approval of Payment Applications.
- C. When Architect finds Application properly completed and correct, it will be transmitted to District, with copy to Contractor.

Part 3. Execution

3.01 Not Used

End of Section

Project Management and Coordination

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulation (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
Contractor Responsibility	Supervision, Project Management, Site Management
Project Management	General Project Management and Supervision
Project Initiation	Pre-Construction Conference
	Project Schedule
	Schedule of Values
Project Coordination	Coordination of work of all suppliers, installers, fabricators, manufacturers and labor forces.
	Coordination throughout the Contract Document set.
Project Site Administration	Site staffing and management
	Site records, information and resources
Communications	Limitations

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Duties of Contractor

- A. The following is not intended to limit the responsibilities of the Contractor, but is to provide for a general understanding of the requirements.
- B. The Contractor is responsible for all superintendence, project coordination and project management.
- C. Sub-Contractor – Supplier Supervision
 - 1. Contractor is explicitly required to oversee and coordinate the work of all sub-contractors and suppliers.
 - 2. Such oversight shall include Quality Assurance prior to the installation of work by a sub-contractor or supplier to ensure that the sub-contractor or supplier is capable of performing the work to the level of quality required and that the sub-contractor or supplier is intending to perform the work to the level of quality required. Refer Quality Assurance section of Division 1 for further requirements.

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3. Such oversight shall include Quality Control during the installation of work by any sub-contractor or supplier to ensure that the sub-contractor or supplier is capable of performing the work to the level of quality required and that the sub-contractor or supplier is intending to perform the work to the level of quality required. Refer Quality Control section of Division 1 for further requirements.
 4. The Contractor shall provide adequate supervision to prevent sub-contractors and suppliers from performing work in such a manner that may require rejection and re-installation.
 - (a) This paragraph explicitly requires to Contractor to act in a pre-emptive manner with regard to sub-contractor and supplier performance.
- D. Contractor is responsible to administer all processing of submittals as defined elsewhere in Division 1.
1. This requirement shall explicitly require preliminary review of all submittals to determine their general compliance with the requirements of the Contract Documents prior to submittal to the Architect.
 2. Failure to review Submittals for compliance may result in rejection of the submittal without providing any grounds for delay claims.
- E. Contractor is responsible for review and coordination of Contract Documents.
1. Contractor is explicitly required to read, study and become familiar with the requirements of the Contract Documents. Such knowledge shall be required to adequately supervise the Work of the Project.
 2. Knowledge of the Contract documents developed by the Contractor for the sole purpose of seeking changes to the Contract shall constitute Non-Performance of the requirements of the Contract with regard for successful completion of the work and may serve as grounds for termination.
- F. Contractor is responsible to review progress of the work and recommend changes to the work that may be appropriate due to site conditions, constructability issues, procurement issues and logistics issues.
1. Contractor shall recommend necessary or desirable changes to the Architect.
 2. Contractor shall review subcontractors' requests for changes and substitutions and submit recommendations to Architect where appropriate.
 - (a) Contractor shall analyze all requests from sub-contractors to determine the appropriateness or usefulness of the proposed change and to determine the potential impacts, both in time and costs, on other portions of the work.
 - (b) The Contractor shall not be entitled to Contract Changes for peripheral work resulting from a proposed change when that peripheral work was not identified in the original recommendation or proposal.
- G. Contractor is responsible for Work Zone security and safety.
1. Refer to other sections in **Division 1** for specific requirements.
 2. The Contractor is responsible for the security of partially completed work until the project is finally accepted by the Architect and District.

2.02 General Project Management and Coordination

- A. Contractor shall provide such management and administrative structure and forces as necessary to complete the Work in a continuous uninterrupted operation.
- B. Contractor shall provide all required management systems including, but not limited to,
 1. Administrative staff

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2. Communications equipment
 3. Document access and reproduction capabilities
 4. Shipping and handling resources for administrative materials
 5. Shelter / Enclosure for management resources
 6. Off site management and administrative resources.

- C. The Contractor must use sufficient manpower and adequate equipment to complete all the necessary work requirements within a minimum period of time.

2.03 Project Initiation

- A. Pre-Construction Conference
 1. Pre-Project Meetings Section of Division 1.
- B. Initial Schedules:
 1. Submit (4) four copies of initial Construction Progress Schedule and Schedule of Values within 7 days after award of Contract. *The first pay request will not be accepted in lieu of the schedule of values*
 2. After review by Architect revise and resubmit where required.
 3. Submit revised progress schedules with each Application for Payment reflecting changes since previous submittal.

2.04 Construction Progress Schedule

- A. Refer to section 01311 "Project Schedule"

2.05 Project Coordination

- A. Coordinate work of all subcontractors.
 1. Verify that adequate services are provided to comply with requirements for Work and climatic conditions.
 2. Verify proper maintenance and operation of temporary facilities
 3. Administer traffic and parking controls for construction workers.
- B. Interpretations of Contract Documents:
 1. Consult with Architect to obtain interpretation or clarifications for any portions of the Contract Documents, which contain discrepancies and/or ambiguities.
 2. All inquiries shall be submitted via standard Request For Information (RFI).
 - (a) RFI's must include building name, location, schedule impact/ criticality and an adequate description of the issue.
 - (b) Contractor may not claim project delays while waiting for a response to a RFI if the District has not been given at least seven (7) days to review request.
 - (c) Requests for Information submitted after noon on a Friday will be considered as submitted the following Monday.
 3. Assist in answering questions, which may arise from sub-contractors, suppliers, the Architect, District and other parties directly involved with the Work.
 4. Transmit written interpretations to involved parties.
- C. The Contractor is responsible for shared coordination with other Contractors performing work adjacent to or within the Work Zone. The Contractor shall make all necessary efforts to ensure that work is coordinated where it interfaces with work of this contract. Additionally, the Contractor is required to be available for joint meetings with adjacent Contractors when necessary for coordination.

2.06 Project Site Administration

- A. Contractor shall provide such site management structure and forces as necessary to complete the work in a continuous, uninterrupted operation and per the terms and schedule of the Construction Contract.
- B. The Contractor shall provide all required Site Administration systems including, but not limited to, the following:
 - 1. Site Management Staff including Project Superintendent and Site Superintendents as necessary.
 - 2. Site management facilities
 - 3. Communications equipment- including: Scanner; email; printer
 - 4. Document management and retention equipment and systems.
 - 5. Support staff including administrative, secretarial and laborers as necessary to support the work of this contract.
- C. Retain on the work site during its progress, a competent full-time superintendent, satisfactory to the Architect and District. The superintendent shall be in full charge of the work and all instructions given to the superintendent shall be binding.
 - 1. District shall interview and approve superintendent prior to contract execution.
 - 2. The superintendent shall not be changed without consent of the District and Architect.
- D. Schedule Management
 - 1. Refer to **Schedule** section above.
 - 2. Manage all aspects of the Project Schedule including phasing, critical construction sequences and interface with District occupied premises and District use schedules.
 - 3. Advise Architect regarding all schedule issues, which may require action or other response on the part of the District.
 - 4. Advise Architect of all schedule issues, which may require action or response on the part of the Architect or any of the Architects consultants.
 - 5. Failure to advise these parties regarding schedule requirements will relieve them of any responsibility for compliance with schedule requirements.
- E. Inspections and testing:
 - 1. Request and coordinate all project inspections a required by Division 1, Title 24 and other applicable codes and standards.
 - 2. Refer to Quality Control Procedures section of Division 1.
 - 3. Refer to Title 24 section of Division 1.
 - 4. Inspect work to ensure that it is performed in accord with requirements of the Contract Documents.
 - 5. Arrange with Architect for special inspections or testing when required.
 - 6. Reject work which does not conform to requirements of Contract Documents.
 - 7. Coordinate testing laboratory services:
 - (a) Notify laboratory of test schedule.
 - (b) Verify that required personnel are present.
 - (c) Verify that specified tests are made as scheduled.
 - (d) Verify compliance of test results with specified criteria. Determine need for retesting and submit recommendations to Architect. Administer required retesting.
- F. Quality Control: Provide quality control over all Construction activities to ensure that all work meets the requirements of the Contract Documents.
 - 1. Refer to Quality Control section of Division 1.

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- G. Administer processing of shop drawings, product data and samples.
 - 1. Refer to Submittal section of Division 1
 - H. Maintain reports and records at job site.
 - 1. Refer to Progress Documentation section of Division 1.
 - I. Ensure that specified cleaning is done during progress of Work and at completion of Contract.
 - 1. Refer to Cleaning section of Division 1.

2.07 Communications

- A. Establish on-site lines of authority and communication. Schedule and conduct progress meetings among District, Architect, and subcontractors.
- B. Communications shall be limited to the immediate Construction team which shall include the following:
 - 1. Contractor
 - 2. Architect
 - 3. District Contact
 - 4. Inspectors.
- C. All communication with School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent Community or Public shall be initiated by the Architect or the District Contact.
- D. The Contractor or any Sub-Contractors shall not review the content of any Project meeting with School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent Community or Public or any other persons not either present at the subject meeting or working under the control of the Contractor.
- E. The Contractor shall not advise School Site Staff, Teachers, Students, Custodial Staff and any member of the Parent Community or Public regarding project progress, nor shall the Contractor take direction from any person other than the Architect or the District Contact unless specifically instructed to do so by the Architect or the District Contact.
- F. In no case shall the Contractor modify the Work of the Project based on the direction of any person other than the Architect.

Part 3. Execution

- A. Not Used

End of Section

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Project Meetings

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
Pre-Construction Conference	<ul style="list-style-type: none"> • Initial Project Meeting prior to start of construction General Table Listing, Requiring bullet points
Regular Project Meetings	<ul style="list-style-type: none"> • Meetings conducted at regular intervals to review project progress and resolve project issues
Payment Application Meeting	<ul style="list-style-type: none"> • Monthly meeting for review of Pay Application
Incidental Project Meetings	<ul style="list-style-type: none"> • Meetings scheduled for special purposes

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 General

- A. All project meetings shall be coordinated by the Architect. The Contractor may request a Special meeting by notifying the Architect.

2.02 Preconstruction Conference

- A. Prior to commencement of Work, a pre-construction conference will be held to discuss procedures to be followed during the process of the Work.
- B. Location: Project Site.
- C. Attending shall be:
 1. Architect
 2. Architect's Professional Consultants
 3. Contractor
 4. Contractor's Superintendent
 5. Subcontractors
 6. DSA Inspector

2.03 Regular Project Meetings

- A. Regular Project Meetings shall be held on a weekly basis
- B. Attending shall be:
 - 1. Architect / Project Coordinator
 - 2. Architect's Professional Consultants, as appropriate to the Agenda
 - 3. Contractor
 - 4. Contractor's Superintendent
 - 5. Subcontractors, as appropriate to the Agenda
 - 6. DSA Inspector
 - 7. Contractor shall determine additional attendees as required by particular stage of work or based on specific issues requiring attention
 - 8. Architect may request additional attendees as appropriate to subject matter on Agenda.
- C. Regular Meeting Agenda / Minutes
 - 1. The Architect will prepare and maintain Agendas / Minutes for All specified meetings.
 - 2. The Architect may request an agenda from the Contractor for incidental meetings requested by the Contractor.
 - 3. Regular Project Meeting Agendas will include the following agenda categories:
 - (a) Old Business
 - (b) New Business
 - (c) Agenda Items
 - (i) *As submitted by attendees*
 - (d) Standing Items
 - (i) *Project Schedule*
 - (ii) *Project Cost Performance*
 - (e) Project Walk Through
- D. Location: Contractor's field office.

2.04 Monthly Meeting for Payment Application

- A. One Regular Meeting each month will be allocated for the review of Payment Applications.
 - 1. This meeting will include review of Project Completion and Project Record Documents prior to review of Payment Application.
 - 2. Approval of Payment Application will require the following to occur at this meeting:
 - (a) Satisfactory review of Project Progress based on Project tour prior to meeting.
 - (b) Satisfactory review of updated Project Schedule, as defined elsewhere in Division 1.
 - (c) Satisfactory review of Project Record Data as defined elsewhere in Division 1.
- B. Review of Progress Billings will occur at the Regular Project Meeting prior to submittal of Application for Payment.
- C. The Contractor shall prepare an itemized draft of the month's proposed billing for review with the Architect at the billing meeting.
- D. Following review of the proposed billing, revise as may be required, prepare Application for Payment, and submit to the Architect.
- E. Monthly Payment Application Meeting Agenda

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1. Agenda: The following specific reviews will occur at the Monthly Payment Application Meeting

#	Item	Remarks
1	Project Tour	Review progress of Construction
2	Record Documents (As-Builts)	Review level of completion of Project record Documents for compliance with level of Work observed in field.
3	Inspector review	Inspector of record issues
4	Security Review	Review of site security measures in place
5	Schedule Update Review	Review of published schedule update.
6	Payment Application Review	Compare against observed completion of Work.

2.05 Incidental Meetings

- A. Incidental Meetings shall be convened as necessary to address issues that may not be appropriate for the regular Project Meeting.
- B. When required in individual specification Sections, the Contractor shall notify the Architect of the need to convene a pre-installation conference at project site prior to commencing Work of the Section.
- C. The Architect or District may request a special meeting at any time.

Part 3. Execution

3.01 Not Used

End of Section

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Construction Progress Documentation

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.
- B. Project Record Documents are a CONTRACTUAL requirement of this project.

Item	Description
Construction Photographs	• Digital
Periodic Site Observation Reports	• Monthly Field report
Progress Schedules and Reports	• Monthly Schedule Update
Record Document Data	• Regular Mark-Ups and Data Logging for use in Record Documents
Record Documents	• Regular input of Record Document Data into Record Documents

- C. *Construction Record Documents also known as "As Built" documents are in important resource for the District, when undertaking future projects or making repairs. These documents must be provided. The Contractor's superintendent is in charge of making sure that all changes are properly documented.*
- D. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 General

- A. Contractor is responsible to provide documentation describing the progress of the work.

2.02 Construction Photographs

- A. The Contractor shall photograph the progress of the work throughout the Construction period. Photographs shall be kept in a log on-site and shall be available for inspection by the Architect. If requested by the Architect, submit photographs with Application for Payment.
 1. Contractor shall provide digital photographs depicting the ongoing progress of the Work.
 2. Digital photos shall include date as part of the digital image.

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3. Digital photo filename shall include date and title as part of the filename. Title shall include location, subject and comments.
 - (a) Sample: 2002-09-21-q-6-east-framing.jpg
(Year-Month-Day-Bldg-Rm No-Location-Description).jpg
 4. Transmission:
 - (a) Digital photos may be provided electronically via e-mail, on CD/DVD, or uploaded to FTP/Website.
 - (b) Digital photos shall be transmitted in .jpg or .tif format only.
 - B. Photographic subjects shall be selected to provide adequate records of progress, attention paid to areas that will eventually be covered or otherwise inaccessible.
 - C. Identify photographs with date, time, orientation, and project identification.
 - D. Include construction photographs with Operation and Maintenance manual.

2.03 Progress Schedule

- A. Contractor shall provide an updated Project Schedule each month prior to submittal of Payment Application. Updated schedule is required prior to approval of payment request.
 1. Refer to Payment Application Section of Division 1.
- B. Provide Updated "Rolling Three Week Schedule" at each Weekly Project Meeting. Architect will provide blank form for this schedule if so requested by General Contractor.
- C. Contractor shall maintain a continuously updated schedule on the project site for review at any time.

2.04 Project Record Document Data

- A. Project record Data shall be defined as ongoing mark-ups, drawings and notes describing any variation from the Contract Documents that may occur over the course of construction with regard to any aspect of the required Work.
- B. Project Record Data shall consist of a stand-alone copy of the Contract Drawings and Specifications for mark-up purposes only. This shall be referred to as the Project Mark-Up Set and shall be accessible to the Architect at all times.
 1. Record Data shall include data from sub-contractors who may be keeping data in their possession. All record data must be available for review at all times.
 2. Architect or Contractor may require several sets be established to allow for input from various sub-contractors.

2.05 Entering Project Record Data

- A. Project Mark-Up Set shall be marked up on a regular basis as work is completed.
 1. In showing the changes in the work, or added work, use the same legends that are used in the contract Drawings. Indicate exact locations by dimensions and exact elevations. Give dimensions from a permanent point.
 2. Mark-ups shall include the following:
 - (a) Changes to the scope of work as a result of Change Orders and field discoveries
 - (b) Progress of the work and identification of completed areas, assemblies or components
 - (c) Ongoing notation describing progress including dates and coordination interfaces.
 3. Specification markups shall include the name of equipment when more than one manufacturer is named in the specifications or when substitutions are approved.

2.06 Project Record Documents

- A. Project record Documents shall be defined as the compilation of Project Record Data, prepared by the Contractor, for presentation to the Architect on a regular basis for review.
- B. Project record Data, in the form of the Mark-up Set, shall be translated to Project Record Drawings on a monthly basis to satisfy Payment Application requirements.
 - 1. Contractor shall present Record Document status to Architect prior to submittal of monthly Payment Applications. Payment Applications will not be authorized if Architect determines that Record Documents are not current.
 - 2. Refer to Payment Application Section of Division 1.
- C. Hand Drawn As-Built Documents
 - 1. Contractor shall make copies of one clean set of Contract Documents at the start of construction. Copies shall be made on reproducible media suitable for amending via hand drawing. The Architect will assist the Contractor in obtaining copies if so requested by the Contractor.
 - 2. Store drawings, one set of Project Specifications, and one copy of each Change Order separate from documents used for construction, for use as Project Record Documents.
 - 3. Indicate actual work on drawings; indicate actual products used in Project Specification, including manufacturer, model number and options.
- D. Digital Record Documents
 - 1. Alternately the Contractor may provide PDF formatted record documents on CD/DVD.
- E. Incomplete Project Record Documents or Data may be supplemented by Post Construction investigation to be provided at the expense of the Contractor.
 - 1. Investigation may include, but not be limited to:
 - (a) Sub grade surveys
 - (b) Electronic investigation of hidden assemblies
 - (c) Destructive exploration (to include repairs as necessary)
 - (d) Any other means necessary to determine extent of variations from Work as shown in Contract Documents.

Part 3. Execution

3.01 Not Used

End of Section

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Project Schedules

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6 of Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section..

1.02 Work Included

- A. A Critical Path Schedule is required for this project. Payment applications will not be accepted or approved without an updated Critical Path Schedule. *Contractors that DO NOT have the expertise in house to provide a professional CPM schedule per these requirements should hire a consultant to perform these tasks.*
- B. The CPM schedule shall be a practical tool utilized to assess the progress of the project and to assess the validity of requested time extensions on change orders. If these requirements are not met, the Contractor will be abrogating his /her right to time extensions and cost increases due to changes required to complete the project, regardless of the causes of such changes.
- C. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item

General

Description

- Project Construction Schedule Utilizing CPM or the Critical Path Method
- Project Construction Schedule Update Procedure
- Project Time Modification

- D. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Definitions

- A. The following definitions shall be established for use in correspondence and record documents concerning Project Schedules. These terms are established to facilitate clarity in reviewing, coordinating and approving Project Schedules and Updates.

Term	Remarks
Critical Path Network Diagram	Diagram (also known as precedence diagram) indicating flow and priority of tasks with arrows and nodes. Tasks shall be indicated on Nodes. Critical Path(s) shall be indicated as a highlighted/bolded path of arrows.
Gantt Chart	Bar Chart developed from CPM Network Diagram. Bars on chart indicate task durations. Indicate Critical Path as a series of bold Red Bars and arrows.
Critical Path Method	Analysis of the sequential and time characteristics of projects by the use of networks. Determines the longest path or "Critical Path" through a project.
Critical Path	Path of events/tasks with 0 total float. Also the Longest Path (s) through a project.
Critical Event or Task	A Task or event that occurs on a Critical Path.
Free Float	= (Late Start Time of current task) – (Late Finish Time of previous task)
Total Float	= (Late Finish Time of Current task) – (Early Finish Time of Preceding task)
Early Start	The earliest time that a Task can begin
Early Finish	The earliest time that a Task can complete
Days: Calendar Days	The Schedule shall take into account all weekends, holidays or other non-working days anticipated by the Contractor.
"Delay Days"	Any formal requests for contract extensions either for compensated or uncompensated days shall be provided in Calendar Days. Delays that cause extension to the overall project duration. Delays must therefore ultimately only affect the "length" of the Critical Path. Concurrent Delays are only counted once.
Delay Analysis or Change order Day analysis	Analysis of delays caused or required by a change order, provided by Contractor, indicating affect of delays on: Total Float and Critical Path. Must include analysis of concurrent delays if occur. Must reference all related tasks.

Part 2. Requirements

2.01 General Schedule Requirements

- A. Schedules shall be developed with any industry standard computer scheduling software.
- B. Provide schedules in digital format **and** on “D” size or 24”x36” sheets.
- C. Schedules shall be developed as an Early Start, Early Finish schedule indicating: Free Float and Total Float for each Event indicated. Schedule shall not use forced late start times for the purpose of creating multiple critical paths. ***Schedules indicating that every task is Critical will be automatically rejected without review***
- D. On all schedule formats required (Network Diagram and Gantt Charts) clearly indicate Critical Path. ***Schedules that do not clearly indicate Critical Path will automatically be rejected without any review***
- E. ***Construction may not begin until a schedule has been submitted.***

2.02 Process

- A. A ***Preliminary Schedule*** shall be submitted within 5 calendar days of Award of Bid and Prior to Execution of Contract.
- B. Architect shall review Preliminary Schedule (requirements outlined below) for conformance with Project Schedule Requirements as described in this section, the General Conditions, Section 01000 and Section 01320
- C. Upon acceptance of Schedule and when all other pre-execution requirements are met, Contract will be executed between District and Contractor.
- D. Within 7 Calendar Days of contract Execution, Contractor shall submit a ***Contract Schedule*** (requirements outlined below).
- E. ***At the District’s discretion, failure to submit a Project Schedule within seven (7) days after award of contract shall be grounds for dismissal of contract.***
- F. Architect shall review the Contract Schedule (requirements outlined below) for conformance with Project Schedule Requirements as described in this section, the General Conditions and Sections 01000 and Section 01320
- G. Contract Schedule shall be updated twice per month (requirements outlined below) and prior to approval of Monthly Pay Request.

2.03 Preliminary Schedule Requirements

- A. A Gantt chart is acceptable for the preliminary schedule.
- B. Critical Path shall be clearly indicated on chart.
- C. The entire project shall be indicated
- D. All phases shall be indicated
- E. Indicate all testing and commissioning periods.
- F. Indicate all transition periods required by the District
- G. The Number of events indicated is per the contractor’s preference.

2.04 Contract Schedule Requirements

- A. Provide a Gantt Chart indicating Critical Path

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- B. Number all Tasks. This number is used for reference in change order time requests
 - C. The number of Tasks indicated shall be appropriate to the Job. All trades involved in project shall be indicated. No Tasks Less than one (1) Day. No tasks greater than two (2) weeks. Upon written request Architect may approve longer durations.
 - D. Total Float Total shall be at least 25 percent of total project time (TF/TT): Indicate this percentage with coversheet attached to Contract Schedule.
 - E. Free Float shall be 25 percent of total project time (FF/TT). Indicate this percentage with coversheet attached to Contract Schedule.
 - F. Contractor shall not submit false delay claims in order to diminish project float time.
 - G. All Tasks shall include appropriate durations. Project schedules with unreasonable or false durations will be rejected.
 - H. Upon review and Acceptance by Architect and District, Contract schedule shall become an integral part of ***The Contract***.

2.05 Project Submittal Requirements

- A. Refer to Section 01330 Submittals

2.06 Project Specific Requirements

- A. The following are requirements that apply specifically to this project. Refer to The Form of Agreement, General Conditions and other project manual sections for all other contractual requirements related to time.
 - 1. Include (15) Fifteen Calendar Days as one final task in the project schedule to be utilized as the equivalent of Free Float and Total Float solely for the District's use. If this time is not utilized by District, contractor completion date is the date at the start of this task. District may utilize this time in order to compensate for day extensions in change orders.
 - 2. All other float in the project schedule shall be utilized before the above "Final Float Task" is accessed. Only the District has a right to this float time.

2.07 Testing Shut Downs

- A. Contractor shall include an additional (5) half days (from 8am until 2pm) of free float to accommodate for District testing shutdowns.
- B. When notified by the Architect at least 48 hours prior to the date, the Contractor shall cease all noise producing operations during defined testing district testing schedules.
- C. When District and Architect mutually agree that Contractor failed to cease operations during the designated testing time period, damages of \$1000.00 per day will be assessed for each occurrence. Amount to be deducted from final payment
- D. Contractor shall not request additional overtime or delay days for any utilized testing days

Part 3. Execution

3.01 Contract Schedule Time Modification Rules

- A. It is the General Contractor's sole responsibility to show that tasks performed as a result of a change order have extended the overall completion date of the project. This means that items must either be shown to be on the current critical path, or they must be shown to cause a revised critical path. *If the work of a change order can be done while other tasks are occurring without causing delay, it is NOT acceptable to extend the contract date resulting in additional "General Conditions".*

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- B. For each Change order submitted Contractor shall request number of days, if any, for additional total project time. This may be Null.
 - C. Event or events requiring time extension must be noted in request. Item must be referred to by a numerical reference to the event indicated on the diagram(s)
 - D. If event has Total Float, the Total Float time shall be deducted from the requested days prior to granting extension of project completion time.
 - E. If an event is already critical (the path stays the same) the overall project time shall be extended. Free Float and Total float for all other items must be re-calculated.
 - F. Concurrent Delays are counted only once when calculating overall project delay. Time required to complete the work of a change order will only change the contract completion date if it is shown to affect overall project completion, by ***Change Order Delay Analysis***.
 - G. Proposals for change orders for which the contractor wishes to be granted additional time shall include reference to any delayed item(s), its event number, original Free Float, original Total Float and revised floats due to the change.
 - H. Any time extensions approved as a part of a change order are considered to be compensated fully by the change order. No further monetary changes will be allowed. Refer to section on change procedures
 - I. *Free Float and Total Float are shared by District and Contractor.* By signing the Construction Contract, the Contractor has agreed to this industry standard. Contractor makes schedule updates that are reviewed by Architect. When any Float time is utilized by District or contractor schedule shall be revised, Contract keeps track of District used Float and Contractor used float.
 - J. Float is used by either District or contractor as long as either is working in good faith. However, Contractor must notify District if it intends to use float provided for an activity/event within one week of the scheduled event
 - K. "Float" is an asset of the project and not for the exclusive use or benefit of the District or the contractor, with the Exception of The Fifteen (15) Days required weather/District use float task and any days required between project phases, which are for the sole use of District.
 - L. If contractor provides a schedule indicating completion of the project earlier than the bid document requirements, the resultant Float time shall be shared by both District and Contractor.

3.02 Look Ahead Schedules

- A. Contractor shall provide three week look ahead schedules for Architect, District, and Contractor review. This short term schedule does not replace any of the other requirements indicated herein.

3.03 Monthly Update Requirements

- A. Schedule shall be re-submitted for Monthly as a condition of pay request approval.
- B. The General Contractor shall be responsible for tracking actual project Process.
- C. If project is behind schedule and contractor intends to catch up Contractor shall prepare a "recovery schedule" in order to indicate to Architect and District a plan of action to re-gain the schedule.

End of Section

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Submittal Procedures

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
Submittal Procedures	<ul style="list-style-type: none"> General procedural requirements for ongoing submittals of required Project Information:
Submittal Types	<ul style="list-style-type: none"> Shop Drawings Product data Samples Manufacturers' certificates Additional Documentation

- B. *Submittal procedures are outlined here so that the Contractor has a clear procedure to follow. Submittals are essential for verification that specified items are actually being provided in the project. A key element is that any items that are substitutions must be clearly noted as such. Substitution items that are not clearly noted as such or do not include proper evidence of equivalence will be returned to Contractor.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.

Item	Description
Submittal Schedule	Provide Schedule of Submittals that will be provided and are required by this Specification

Part 2. Part 2 - Requirements

2.01 Submittals

- A. Refer to A201, General Conditions for detailed information regarding submittals.
- B. Submittals shall be defined as any information required to demonstrate to the Architect any of the following:
 1. Full understanding of the intent of the Contract Documents.

-
2. Presentation of available choices for product selections when allowed by the Contract Documents
 3. Presentation of available choices for product selections when not previously specified in the Contract Documents
 4. Requests for substitutions by the Contractor or the Architect.
 5. Specification Sections in these Documents enumerate the minimum number of submittal items required by the Contract. The Architect may request additional submittals for other items at any time when submittals may be required to fully demonstrate product options or understanding of the intent of the Contract Documents.
 6. Nothing in these documents shall limit the Architect's ability to request submittals for items not specifically defined as requiring submittals in the Contract Documents.
- C. Refer to Product options and Substitutions for requirements for indicating options and requesting approval of Substitutions elsewhere in **Division 1**.

2.02 Procedures

- A. Submittals: Transmit each item under AIA Form G810 or a similar approved form.
1. Identify project, Contractor, subcontractor, major supplier.
 2. Make submittals in accordance with approved Progress Schedule and approved Shop Drawing Submission Schedule in sequence that avoids delaying work and the progress of other Contractors.
 3. Identify pertinent drawing sheet and detail number, and specification section number as appropriate.
 4. Identify deviations from Contract Documents.
 5. Provide space for Contractor and Architect review stamps.
- B. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- C. Contractor transmittal of submittals to Architect represents that field measurements, field construction criteria, materials, catalog numbers and similar data have been determined and verified.
1. Contractor shall stamp each submittal after Contractor review and prior to transmittal to the Architect.
 2. Transmittal of submittals that have not been reviewed and stamped by Contractor shall be returned without review.
- D. After Architect's review of submittal, revise and resubmit as required, identify changes made since previous submittal.
1. Architect review of submittals shall be for design concept only and shall not be construed as approving departures from Contract Documents.
- E. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly review and report any inability to comply.

2.03 Submittal Schedule

- A. Submit Schedule of Submittal to Architect within 7 days of contract execution.
- B. For each event requiring submittal review and approval by Architect, provide date of required submittal return in order to ensure no delays due to ordering process of materials.
- C. Provide a separate typewritten **Submittal Schedule** consisting of: list of submittals, related specification section, anticipated date of submittal. Include also:
1. "Preferred" date of return (no free float impact)

-
2. "Required Date" of return. Accounts for sufficient ordering period so that the latest date for which a Task's Free float will become zero (0)
 3. "Will Delay Project" date of return. Accounts for sufficient ordering period so that the latest date for which a Tasks Total float will become zero (0).
 4. Submittal Schedule does not have to be updated during the project.
 5. Submittal Dates above shall include provision of review period indicated under Submittal Procedures Section.

2.04 Time

- A. Submittals shall be made by the Contractor such that no delay is caused to the Work.
- B. Review time for submittals shall vary based on the complexity of the submittal and the number of parties who will be required to review the submittal.
 1. The Contractor shall assess the complexity of each submittal and ensure that submittal occurs at a time prior to construction that allows adequate review time for the submittal.
 2. No maximum time is herein stipulated for submittal review.
 3. Extended time for submittal review shall not be the basis for delay claims by the Contractor.
 4. The Architect shall seek to review submittals in a timely manner and shall provide due diligence to facilitate review by other parties. The Architect shall not be responsible for delays resulting from extended review of submittals when the submittal was not made by the Contractor with adequate time for review by the Architect.

2.05 Shop Drawings

- A. Submit 2 sets of prints for review.
 1. Shop drawings shall include, but not be limited to:
 - (a) Refer to specific Sections for requirements
- B. Contractor shall review prior to submittal and sign Shop Drawings indicating that Contractor has reviewed drawing prior to submittal and that drawings meet Contract Documents and job conditions. Shop drawings not reviewed by General Contractor prior to submittal to Architect will be returned without review by Architect.

2.06 Product Information

- A. Submit product literature, cut sheets and other descriptive information as required to define and describe subject products or assemblies. Contractor may submit photocopies or scans of color or glossy product information provided a minimum of two copies of color or glossy original is submitted to be retained by the Architect.
 1. Product Information shall include, but not be limited to:
 - (a) Refer to specific Sections for requirements
- B. Contractor shall review prior to submittal and sign Product Information indicating that Contractor has reviewed drawing prior to submittal and that drawings meet Contract Documents and job conditions. Product literature not reviewed by General Contractor prior to submittal to Architect will be returned without review by Architect.

2.07 Samples

- A. Submit full range of manufacturers' standard colors, textures and patterns for Architect's selection. Submit as complete range of materials to be selected at one time so that Color Schedule can be completed on the basis of coordinating all colors and materials to be selected.

1. Samples shall include, but not be limited to:

(a) Refer to specific Sections for requirements

B. Submit samples in conjunction with related product information. When product information accompanies samples, provide only one copy of sample for physical review. Selections and comments will be made on multiple copies of accompanying product literature.

2.08 Manufacturers' Certificates

A. Submit certificates, in duplicate, in accordance with requirements of specification section.

2.09 Paper Waste

A. Minimize paper waste for all submittals. Provide only the information required. Eliminate peripheral information for products and assemblies not specified or not included for use.

B. Submittals requiring extensive comment, coordination, shall be submitted in reproducible form. The Architect will make comments and notation on one copy and provide reproduced copies for interested parties.

Part 3. Execution

3.01 Not Used

End of Section

Title 24, Part 1: Administrative Requirements

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Division of State Architect Requirements and Coordination	<ul style="list-style-type: none"> • All coordination required to facilitate DSA Required inspection and special inspection • Completion and filing of Verified Field Reports • Change order procedures meeting DSA requirements • All other requirements of CCR-Title 24-Part 1, Administrative Requirements not specifically noted here that are the contractor's responsibility
B.	Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References	California Building Code
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Part 2. Requirements

2.01 General

- A. The Work of this project is regulated by the California Department of General Services, Division of State Architect. Contractor is responsible to comply with all requirements regarding Inspection, Observation and Documentation for such projects.
- B. Contractor recognizes the authority of the jurisdiction in which the project is being constructed and explicitly agrees to perform all work of this project in conformance with that authority.

- C. Rejection of any Work by inspectors responsible to the jurisdiction shall not be the basis for Contract Changes.

2.02 DSA Forms

- A. DSA forms shall be completed as required by Part 1, Title 24 CCR Chapter 4 and DSA PR13-01 found at http://www.documents.dgs.ca.gov/dsa/pubs/PR_13-01.pdf The following forms are listed as a reference. General Contractor is responsible for those forms so noted.

Form Name	Number	Filer	Frequency
Project Inspector Qualification and Approval	DSA-5	Project Inspector	Prior to construction
Construction Start Notice/Inspection Card Request	DSA-102IC	Architect	Prior to construction
Project Inspection Card	DSA-152	Project Inspector	At completion of each "Section" as noted in the form. Interim/Final forms are required.
Project Inspector's Semi-monthly report	DSA-155	Project Inspector	Semi-monthly
Contractor's Verified Report	DSA-6C	Contractor	At project completion
Architect's Verified Report	DSA-6AE	Architect	At completion of each "Section" as noted in DSA-152 form.
Project Inspector's Verified Report	DSA-6PI	Project Inspector	At completion of each "Section" as noted in DSA-152 form.
Verified Laboratory Report	DSA-291	Testing Agency	At completion of each applicable "Section" as noted in DSA-152 form.
In-Progress Test Report	N/A	Testing Agency	Within 14 days after each test
Notice of Completion	N/A	District	At project completion
Special Inspection Reports	N/A	Special Inspector	Within 14 Days after each test
Special Inspection Verified Report	DSA-292	Special Inspector	At completion of each applicable "Section" as noted in DSA-152 form.
Geotechnical Verified Report	DSA-293	Special Inspector	At completion of each applicable "Section" as noted in DSA-152 form.

2.03 Observation (Ref Part 1, Title 24, CCR: Section: 4-333.a)

- A. The Architect will observe the work of construction periodically. The contractor shall facilitate this observation by allowing the architect full access to the work area during normal hours of construction work.

2.04 Inspection (Ref Part 1, Title 24, CCR: Section: 4-333.b)

- A. The District shall provide for and require competent, adequate and continuous inspection by an Project Inspector (PI) satisfactory to the Architect and approved by DSA

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- B. The General contractor shall provide the Project Inspector access to all areas of construction at any time during the construction period.
 - C. The cost of project inspection shall be paid for by the District
 - D. General Contractor shall provide Project Inspector minimum 48 hours written notification for all required inspections. General contractor shall utilize inspection request form provided by Project Inspector.
 - E. All Inspection requirements as indicated in DSA form 103 (T&I Form) shall be met and coordinated with the Project Inspector
 - F. Contractor shall not schedule processes or installations requiring Project Inspector oversight during weekends.
 - G. Per Title 24 , CCR: Art 5: 4-342.3: "The inspector as a condition of employment shall have and maintain on the job at all times, the edition of title 24 Parts 1,2,3,4,5 and 6 referred to in [these] plans and specifications."

2.05 Special Inspection (Ref Part 1, Title 24, CCR: Art. 5: 4-333.c)

- A. Special inspection shall be undertaken as noted in the construction documents
- B. Special inspection shall be undertaken by Special Inspectors approved by DSA for inspection of particular disciplines of construction
- C. If qualified, the Project Inspector may also be designated as a Special Inspector.
- D. Special Inspectors shall be employed by the District's Testing Laboratory
- E. All deficiencies discovered by the Special inspector shall immediately be reported to the Project Inspector.
- F. Contractor shall not schedule processes or installations requiring Special Inspection oversight during weekends.

2.06 Supervision by DSA (Ref Part 1, Title 24, CCR: Art. 5: 4-334)

- A. During construction, the Field Engineer from the Division of the State Architect may visit the site at any time in order to verify the work is proceeding according to the approved construction documents.
- B. The General contractor shall provide the DSA Field Engineer access to all areas of construction at any time during the construction period. Advance notification by DSA should not be expected.

2.07 Testing Laboratory Services

- A. District will appoint, employ, and pay for services of an independent firm to perform field and laboratory testing per requirements of CCR Title 24 Part 1.
- B. The independent firm will perform inspections, tests, and other services as described in the Statement of Structural Testing and Inspection form included in the Contract Documents.

Part 3. Execution

3.01 General

- A. It is the duty of the contractor to complete the work covered by this contract in accordance with the approved plans and specifications.
- B. If at any time it is discovered that work is being done which is not in accordance with the approved plans and specifications, the contractor shall correct the work immediately.

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- C. All inconsistencies or items that appear to be in error in the plans and specifications shall be promptly called to the attention of the architect through the inspector for clarification at once.
 - D. In no case shall the instruction of the architect be construed to cause work to be done that is not in conformity with the approved plans, specifications and change orders.
 - E. The Contractor shall not carry on work except with the knowledge of the project inspector.

3.02 Verified Reports

- A. Contractor shall complete final verified field report (form DSA-6) and file two copies at completion of project with the Division of the State Architect.

3.03 Inspections

- A. For all inspections required as noted in other areas of the construction documents, notify Project Inspector and Special Inspector at least 48 hours in advance. Weekend inspections will not be performed.
- B. Project Inspector may require memorial inspections of specific items. These may be reviewed during pre-construction meeting. Although the Project Inspector may be on site continuously, it is still the General Contractor's responsibility to provide proper notification of required inspection.
- C. If a particular inspection fails more than twice, the Project Inspector's fees for subsequent inspections will be charged to the general contractor. Prorated based on Inspector Agreement.
- D. Project Inspector will keep track of all additional services required due to failed inspections. All fees for these additional services will be deducted from final payment.

3.04 Testing Laboratory Services

- A. General Contractor shall review the Testing and Inspection form on the Title Sheet of the drawing package and notify all parties (Inspector, Architect, District) seven (7) days prior to any required testing or special inspection.
- B. One copy of test reports shall be forwarded to DSA, The Architect, The Structural Engineer and the Project Inspector by the testing agency within 14 days of the date of the test.
- C. Re-testing: Contractor shall schedule all required tests with Project Inspector, who will in turn notify the Testing Laboratory or Testing Agency at least 48 hours prior to test. Weekend inspections will not be performed.
- D. Re-testing required because of non-conformance to specified requirements will be charged to the Contractor.
- E. Any items requiring testing that do not pass tests will be corrected by General Contractor at no expense to District.
- F. In the event that the General Contractor requests an inspection by Testing Laboratory or Testing Agency (via the Project Inspector) but the particular item to be tested is not ready for the inspection or test, the General Contractor shall pay all associated costs assessed by testing agency.
- G. Cooperate with independent firm; furnish samples as requested.
- H. All charges and payments must be made to the District. No payments from contractor to the testing lab, special inspectors, or project inspector are permitted.

End of Section

Regulatory Requirements and Trade Standards

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
General	<ul style="list-style-type: none"> • Applicable References • Trade Standards

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.
- B. Perform the Work in conformance with the latest edition of all applicable regulatory requirements and referenced standards, including, but not limited to, the following:

References	<ul style="list-style-type: none"> • 2013 Building Standards Administrative Code, Part 1, Title 24 CCR • 2013 California Building Code (CBC), Part 2, Title 24, CCR(2012 IBC, Volumes 1-2 & 2013 CA Amendments) • 2013 California Electrical Code, (CEC), Part 3, Title 24 CCR <ul style="list-style-type: none"> ○ 2011 NEC & 2013 CA AMDT • 2013 California Mechanical Code, (CEC), Part 4, Title 24 CCR <ul style="list-style-type: none"> ○ 2012 UMC & 2013 CA AMDT • 2013 California Plumbing Code, (CEC), Part 5, Title 24 CCR <ul style="list-style-type: none"> ○ 2012 UPC & 2013 CA AMDT • 2013 California Energy Code, (CEC) Part 6, Title 24 CCR • 2013 California Fire Code (CFC), Part 9, Title 24 CCR <ul style="list-style-type: none"> ○ 2012 IFC & 2013 CA AMDT • 2013 California Referenced Standards Code, Part 12 Title 24 CCR
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- Title 19 CCR Public Safety State Fire Marshall Regulations
 - 2007 ASME A17.1 (w/ A17.1a/CSA B44a-08 Addenda)
 - Safety Code for Elevators and Escalators
 - Manual of Steel Construction, 14th Edition
 - 2012 National Design Specification for Wood Construction
 - ACI-318-11
 - NFPA 13 Automatic Sprinkler System, 2013 Ed.
 - NFPA 14 Installation of Standpipe and Hose Systems (CA AMDT), 2013 Ed.
 - NFPA 17 Dry Chemical Extinguishing Systems, 2013 Ed.
 - NFPA 17A Wet Chemical Extinguishing Systems, 2013 Ed.
 - NFPA 20 Stationary Pumps, 2013 Ed.
 - NFPA 24 Installation of Private Fire Service Mains (CA AMDT), 2013 Ed.
 - NFPA 72 National Fire Alarm Code (CA AMDT), 2013 Ed.
 - NFPA 80 Fire Doors and Other Opening Protectives, 2013 Ed.
 - NFPA 92 Standard for Smoke Control Systems, 2012 Ed.
 - NFPA 2001 Clean Agent Fire Extinguishing Systems, 2012 Ed.
 - ADAAG: Americans with Disabilities Act Accessibility Guidelines
 - Any Referenced standards noted in the Contract Documents.
 - California Labor Code
 - Federal Occupational Safety and Health Administration (OSHA).
 - California Occupational Safety and Health Act (CAL/OSHA).

1.04 Conflicts

- A. Notify the Architect in writing to determine proper course of action when conflicts occur:
 - 1. Between Referenced Regulatory Requirements, OR
 - 2. Between Referenced Regulatory Requirements and Contract Documents, OR
 - 3. Between Contract Documents:

1.05 Applicable Reference Standards

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.
- C. Obtain copies of standards when required by Contract Documents. Maintain copy at jobsite during progress of the specific work.

1.06 Industry Standards

- A. The Contractor shall acknowledge that many products, systems and assemblies may not be fully specified herein. For such items, the Architect shall be able to rely on Industry Standards for determination of satisfaction of quality expectations.
- B. Refer Quality Control section of Division 1.
- C. Refer Quality Assurance section of Division 1.

Part 2. Products

2.01 Not Used

Part 3. Execution

3.01 Not Used

End of Section

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Quality Assurance Procedures

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws Apply To The Work Of This Section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
General	<ul style="list-style-type: none"> • General Quality Assurance
Qualifications	<ul style="list-style-type: none"> • Fabricator Qualifications • Installer Qualifications • Manufacturer Qualifications • Testing Agency Qualifications

- B. Related work may be described in other sections of this project manual. All sections of this Project Manual and all other Contract Documents shall be considered related by the Contractor. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Quality Expectation

- A. Quality expectation shall be defined by these Documents, by References cited herein either directly or indirectly, and by reasonable Industry Standards.
- B. Where not explicitly defined herein, levels of Quality required for any product, material, installation or assembly shall be measured against standards expressed or defined in comparable areas of similar industries.
 - 1. Industry Standard shall be determined by any one of the following:
 - (a) Explicit Quality standards not included herein but available from manufactures either specified herein or used in comparable situations on other projects of similar nature.
 - (b) Implied quality standards based on comparison of similar components on projects of similar nature.
 - (c) Basic functional and performance standards that can be reasonably inferred from similar products in dissimilar situations.
 - (d) Direct comparison with existing construction either within the District or the region.

2.02 General Quality Assurance

- A. Quality-control services include inspections, tests, and related actions including reports, performed by Contractor, by independent agencies, and by governing authorities.

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- B. The Contractor shall provide all necessary materials and labor to insure Quality Control and adherence to the levels of quality defined in the Contract Documents.
 - C. The District will employ and pay a qualified independent testing agency to perform tests and inspections specified in other Sections, and those required by authorities having jurisdiction.
 - 1. Contractor is responsible for scheduling inspections and tests.
 - 2. Provision by the District of Independent Testing and Inspection does not relieve the Contractor of any responsibility for achieving levels of Quality specified herein prior to Inspection and testing.
 - 3. Retesting: Contractor shall reimburse the school District for retesting where results of inspections and tests prove unsatisfactory and indicate noncompliance with requirements.
 - D. The Contractor shall be responsible to require and verify the qualifications of all suppliers, subcontractors and material handlers. Qualifications shall be consistent with requirements of all trades, regulatory requirements, related specification sections and industry standards.
 - E. Contractor shall monitor quality control over fabricators, installers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
 - 1. Contractor shall be required to monitor quality on a pre-emptive basis in order to prevent work from being performed incorrectly.
 - 2. Reliance solely on removal of rejected work shall not meet this requirement nor shall it constitute compliance with the requirements of the Contract.
 - F. Contractor shall assure that all selected Fabricators, Installers and Manufacturers are qualified to produce their respective portions of the work to level of quality specified or as defined by Industry Standards and Expectations.
 - 1. Contractor shall verify that all elected Fabricators, Installers and Manufacturers intend to install their work according to the requirements of the Contract Documents. Such verification shall be based on preliminary review of methods, means and materials, preliminary verbal and written coordination, preliminary instruction and directive and any other means necessary to assure quality performance.
 - G. The Architect shall retain the right to cite "Industry Standard" as a basis for required quality for all common materials, assemblies and components used in similar installations throughout the region.
 - H. Comply fully with manufacturers' instructions.
 - I. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
 - J. Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to the manufacturer's or vendor's names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturer's or vendor's which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

2.03 Qualifications

- A. The Contractor shall assure and be responsible for providing Fabricators, Installers, Manufacturers that meet the quality standard defined in, or implied by, the Contract

Documents or stated in any referenced regulatory statute, referenced trade standards or any other applicable regulatory instrument.

- B. The Contractor shall assure that any testing and inspection agency utilized by the Contractor or any Fabricator, Installer or Manufacturer meets applicable governmental standards for their particular field of expertise and participation.

2.04 Fabricators' Installers', Manufacturers' Field Services and Reports

- A. When specified in respective specification sections, require material or Product manufacturer or supplier to provide qualified staff personnel to observe site conditions and to initiate instructions when necessary.
- B. When specified in individual specification Sections, require suppliers or manufacturers to Observe field conditions, including conditions of surfaces and installation.
 - 1. Observe quality of workmanship.
 - 2. Provide recommendations to assure acceptable installation and workmanship.
 - 3. Where required, start, test, and adjust equipment as applicable.
- C. Report observations and site decisions or instructions that are supplemental or contrary to manufacturers' written instructions.

2.05 Supervision

- A. Field Services shall include, but not be limited to:
 - 1. Field Measurement and Inventory
 - 2. Delivery and Handling Supervision
 - 3. Installation Supervision
 - 4. Start Up and Operation Supervision
 - 5. Commissioning Participation as defined elsewhere in Division 1.
- B. All Field Services necessary to provide, install and verify satisfactory operation of any material, assembly, device or installation shall be considered a requirement of this Contract.
- C. The Contractor shall provide full time supervision and observation of all construction activities to ensure that Quality standards are being met.
- D. The Contractor shall not rely on observation by the District, Architect or Inspectors to maintain Quality Assurance over construction activities. It is the sole responsibility of the Contractor to provide, construct and deliver all project components at quality levels defined in these documents and equal to quality levels defined by, and occurring in, standard industry procedures and processes.
 - 1. Contractor acknowledges that the requirements for supervision defined in the Contract do NOT fix responsibility for Quality Assurance upon the District, Architect, Inspectors or other outside entity. Such Quality Assurance as may be offered by any of these parties is supplemental to the requirements of the Contract and not in lieu of requirement of the Contract.

2.06 Inspection and Testing Laboratory Services Provided by District

- A. Refer to Section 01351 for specific requirements related to Inspection regulated by the Division of State Architect (DSA).
- B. Auxiliary Services: Contractor shall cooperate with agencies and laboratories performing inspections and tests. Provide auxiliary services as requested. Notify lab or agency in advance of operations requiring tests or inspections, to permit assignment of personnel. Auxiliary services include the following:
 - 1. Access to the Work.

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2. Incidental labor and facilities to assist inspections and tests.
 3. Adequate quantities of samples of materials that require testing, and assisting in taking samples.
 4. Facilities for storage and curing of test samples.
 5. Security and protection of samples and test equipment.
- C. The Contractor explicitly accepts the jurisdiction of this project as a condition of the Contract and agrees to accept and incorporate the results of all actions taken by personnel of this jurisdiction in administering testing and inspection services.
1. Jurisdiction personnel may include direct employees of the jurisdiction or independent inspectors and testing personnel employed either by the jurisdiction or stipulated for inclusion on this project by the jurisdiction.

2.07 Inspection and Testing Laboratory Services Provided by Contractor

- A. Not specifically required as part of this Contract. May be required as part of individual Specification Sections or to achieve specific levels of quality defined elsewhere in this specification.
- B. Duties of Testing Agency: When provided by Contractor, Testing agency shall cooperate with Architect and Contractor in performing its duties. Agency shall provide qualified personnel to perform inspections and tests.
1. Agency shall notify Architect and Contractor of irregularities or deficiencies observed in the Work during performance of its services.
 2. Agency shall not release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
 3. Agency shall not perform duties of Contractor.
- C. Submittals: Testing agency shall submit a certified written report of each inspection and test to the following:
1. District.
 2. Architect.
 3. Contractor.
 4. Structural Engineer.
 5. Authorities having jurisdiction, when authorities so direct.
- D. Report Data: Reports of each inspection, test, or similar service shall include at least the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making the inspection or test.
 6. Designation of the Work and test method.
 7. Identification of product.
 8. Complete inspection or test data.
 9. Test results and an interpretation of test results.
 10. Ambient conditions at the time of sample taking and testing.
 11. Comments /Professional Opinion Regarding Tested Work
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting or re-inspection.

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- E. Qualifications for Service Agencies: Engage inspection and testing service agencies that are prequalified as complying with the American Council of Independent Laboratories' "Quality Assurance Manual" and that specialize in the types of inspections and tests to be performed.
 - 1. Each agency shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

2.08 Construction Photographs

- 1. Refer Progress Documentation Section of Division 1.

Part 3. Execution

3.01 Not Used

End of Section

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Temporary Facilities

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.
- B. This section describes construction operations, temporary construction facilities, temporary controls, including

Item	Description
Construction Operations	<ul style="list-style-type: none"> • Field office, communication facilities, toilets • Construction Fencing and Barricades • Construction Caution Signage • Ventilation • Electricity and lighting • Water • Removal of Temporary Facilities

- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References	<ul style="list-style-type: none"> • 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's "Temporary Electrical Facilities." • Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.
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Part 2. Requirements

2.01 General

- A. Contractor shall provide and maintain such Temporary Facilities to support the work of this Contract.
 - 1. Include facilities necessary to manage the project and support the construction operations
 - 2. Include facilities necessary to maintain operation of the remainder of the building / site for use by the District including temporary utilities, access routes and safety components.

2.02 Field Office, Communication Facilities, Toilets

- A. Location of Field Office shall be determined with Architect prior to the start of construction.
 - 1. Provide full communication capabilities to project Superintendent as defined below.
- B. Contractor shall provide the following capabilities at in at least one site location.
 - 1. Provide minimum work space for review of plans and specifications.
 - 2. Provide a conference table and seating to accommodate Project Meetings.
 - 3. Provide a separated for use by the Project Inspector.
 - 4. Maintain a minimum of 1 telephone line for voice communications, 1 data line for e-mail. (Telephone line and Wifi access will be provided by District)
 - 5. Provide a telephone hand set, computer, scanner and printer
 - 6. Provide posting space for Project Schedules
 - 7. Provide posting space for all required State, Local and Federal publications relating to Labor, Safety and Discrimination.
- C. Provide portable toilets for use by all members of the construction crew.
 - 1. Toilets shall meet all state and local requirements regarding Accessibility, Sanitation and Fixture Count.
 - 2. No Construction Personnel may use student toilets on campus for any purpose.

2.03 Construction Fencing and Barricades

- A. Refer to Security – Safety section of Division 1.

2.04 Construction Caution Signage

- A. Refer to Security – Safety section of Division 1.

2.05 Use of Existing Utilities / Systems

- A. The Contractor may request usage of existing systems, utilities and devices that may remain operational in the Work Zone. Such usage may only be granted by the Architect upon written request.
 - 1. All such systems shall become the responsibility of the Contractor. The Contractor shall provide all maintenance, repairs, required safety inspections and related service, and replacement upon failure.
 - 2. For systems designated for abandonment as part of the project, the Contractor may utilize systems with permission. The Contractor assumes responsibility for these systems until such time as they are taken out of service as part of the Work of this Contract.
 - 3. This stipulation applies to all utilities and systems listed below as well as any not identified herein but for which usage is requested by the Contractor.

2.06 Electricity and Lighting:

- A. Provide service required for construction operations, with branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords.
 - 1. Contractor may use existing power supplied by District for construction operations provided capacity is adequate to maintain existing District operations. Contractor shall verify capacity.
 - 2. Contractor may use existing power supplied by District for construction trailer.
 - 3. All required connections shall be provided by general contractor and shall meet all applicable building codes.
- B. Maintain lighting and power at all District-occupied spaces during construction at all times. Any planned interruptions in service must be arranged with District at least 48 hours in advance.
 - 1. Refer to Work Restriction section in Division 1 for shutdown requirements. .
- C. Permanent lighting may be used during construction where power is adequate and usage will not adversely affect ongoing District operations of the facility.

2.07 Water

- A. Provide service required for construction operations, with temporary piping as necessary to serve all areas of construction work. Temporary piping shall be installed and assembled so as to prevent leakage or failure during construction operations and after hours.
 - 1. Contractor may use existing water supply for construction operations.
- B. Maintain water to all occupied portions of building throughout construction period. Coordinate temporary water shutdowns with District. Provide minimum 48 hrs. Notice to allow District to notify tenants and users prior to shutdowns.
 - 1. Refer to Work Restriction section in Division 1 for shutdown requirements. .
- C. Coordinate major shutdowns (facility wide) a minimum of (1) week in advance so that occupants may prepare alternate schedules and uses.
 - 1. Refer to Work Restriction section in Division 1 for shutdown requirements. .
- D. Contractor is responsible for provision of all temporary water lines to bypass construction area. Provision shall include tie-in to existing lines, inclusions of any valves necessary for subsequent control, and coordination with water system as designed.

2.08 Fire Protection

- A. Refer to Security – Safety section of Division 1.

2.09 Removal of Temporary Facilities:

- A. Remove temporary facilities and controls before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to District.
 - 1. At the earliest possible time, change over from use of temporary utility services to use of permanent utilities.
- B. Remove Contractor provided Cautionary Signage.
- C. Clean and repair damage caused by installation or use of temporary facilities.

Part 3. Execution

3.01 Not Used

End of Section

Security and Site Safety

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Site Security / Safety	<ul style="list-style-type: none"> • Site Safety • Material Safety • Equipment Safety • Public Safety • Construction Fencing and Barricades • Construction Caution Signage • Security Lighting • Fire Protection • Mandated Security Requirements

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References	<ul style="list-style-type: none"> • 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's "Temporary Electrical Facilities." • Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.
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Part 2. Requirements

2.01 Site Safety

- A. The Contractor is fully responsible for safety of the Work Zone, Staging Area and all Contractor occupied areas as well as any other areas of the Site occupied by or used for any purposes by the Contractor or Sub-Contractors.
- B. The Contractor shall comply with all local, State and Federal requirements for worker safety.
- C. The Contractor shall maintain written Safety procedures, methods and shall conduct regular Safety briefings throughout the Construction period.

2.02 Material Safety

- A. The Contractor is responsible for the safe storage, handling and dispensation of all materials, products and assemblies associated with the Work of this project.
 - 1. Material storage areas shall be fully isolated from the access by the public by means of Security Fencing.
- B. The Contractor shall maintain copies of all Material Safety Data Sheets (MSDS) on site at all times.

2.03 Equipment Safety

- A. The Contractor is responsible for the safe handling, operation and safety required maintenance of all equipment, tools and machinery associated with the Work of this project.
 - 1. Equipment stored on site shall be fully isolated from the public by means of Security Fencing.

2.04 Public Safety

- A. The Contractor is responsible to protect the Public from harm caused by any aspect of the construction operation.
 - 1. Methods shall include, but not be limited to, fencing, barricades, area closures, signage, announcements, etc.
 - 2. Provide visual screening for all welding operations to ensure that no member of the public can obtain a direct view of the welding arc.
 - 3. Provide barricades for all lifting, craning and other overhead operations, including operations on roofs near occupied areas.
 - 4. Provide pedestrian and traffic control as necessary to restrict access during incidental operations that pose safety risks.
- B. The Contractor shall report recurring violations of fencing and barricades by the public to the District immediately and shall use all reasonable means to remove violators from the Work Zone.
- C. The Contractor shall observe all workers, sub-contractors, suppliers and equipment operators for unsafe behavior and terminate the behavior immediately.
- D. The District maintains a Zero-Tolerance policy for Public Safety Violations and will reserve the right to immediately cease all construction operations if a violation is observed.
 - 1. The District reserves the right to request a safety inspection from the governing authority at any time. Inspection may be requested from Cal-OSHA. If an inspection is requested, the Contractor shall correct any violations and provide the District with certification and clearance.

2.05 Construction Fencing and Barricades

- A. The Contractor is fully responsible for security of the Work Zone, Staging and Parking Areas. These areas will be determined in conjunction with Architect prior to start of construction. The Contractor shall maintain physical security by providing the following:
 - 1. Construction Fencing:
 - (a) Construction fencing shall consist of chain link panels with opaque fabric to block all views of construction activities. Refer documents for locations. (These are located inside the building between areas of student activities and construction activities)
 - (b) Fencing shall be provided as indicated in these documents.
 - (i) *Fencing shall be required between the Parking lot and the school buildings as necessary to prevent access to the Work Zone by the public. Location of contractor parking area to be determined prior to start of construction.*
 - (ii) *Full perimeter fencing is not required. However;*
 - (iii) *Fencing shall be installed as necessary to prevent public entry to construction areas and to protect adjacent areas from damage from construction operations.*
 - (iv) *Contractors shall provide fencing to ensure complete visual and physical separation between students and workers, at both interior & exterior work areas.*
 - (c) Maintenance of the construction fencing is the responsibility of the General Contractor. Contractor shall check the condition of the fencing every day, including weekends and any other days that work is not in progress. Repair any deficiencies found immediately.
 - (d) Include construction fencing as required to isolate storage and staging areas from the public. Refer to drawings for specified staging and parking areas.
 - 2. Provide barriers to separate work areas from areas of partial occupancy. Include dust barriers where required. Coordinate installation of all barriers with District.

2.06 Construction Caution Signage

- A. The Contractor shall post and maintain Caution Signage at all Construction Fences and barricades.
 - 1. Standard Cautionary Signage will be provided by the Contractor. The Contractor will be responsible to post this signage, relocate it when fences are moved and notify the Architect when signage has been damaged or removed.
 - 2. Contractor shall re-install District provided signage when it has been removed or otherwise damaged.
- B. The Contractor shall maintain additional signage, tape, lighting and other markings as required by Cal-OSHA and other State and Federal regulations.

2.07 Security Lighting:

- A. Maintain existing Security Lighting throughout the Work Zone.
- B. Where portions of buildings remain unlocked after hours, provide interior and exterior night lighting at all entries and throughout the interior. Lighting levels shall provide the ability to see persons moving in the building at night.
- C. Provide additional security lighting where walk ways, corridors or other public ways have been altered in any way as a result of construction.
 - 1. This applies to areas where fencing has intruded into existing walk ways and corridors and existing night lighting is not available.

2.08 Fire Protection

- A. Provide temporary fire protection until permanent systems supply fire-protection needs.
 - 1. Provide adequate numbers and types of fire extinguishers. Clearly label the extinguishers. Place within 75 feet of any construction operations. Extinguishers shall have current certification tag attached.
 - 2. Store combustible materials in fire-safe containers in fire-safe locations.
 - 3. Prohibit smoking.
 - 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 - 5. Welding shall comply with CFC Chapter 35 (Hot Work).
- B. Barriers described above shall be maintained and placed so that emergency egress from any buildings under construction or occupied by students and faculty is not hindered.
- C. Maintain minimum 15 ft. wide corridors or passage ways between fencing and occupied buildings where exits occur at occupied buildings.
- D. All construction barriers, material stockpile and equipment shall be placed so as to allow access by Fire Department Vehicles in case of fire.

2.09 Mandated Security Requirements

- A. Refer to the Specific Conditions item 5 for Fingerprinting requirements.
 - 1. The Contractor shall ensure that contact with students at active school sites is limited per the definitions in Division 1.
- B. The District has a strict Tobacco Free policy. All tobacco use, including smoking, chewing or any other means of use is prohibited in any area of the work zone or other District facilities.
 - 1. The District maintains a Zero Tolerance policy regarding Tobacco use. Observation of any such usage may be grounds for work stoppage and termination.
- C. The District maintains a Zero Tolerance policy regarding alcohol and drug use. Observation of any such usage may be grounds for work stoppage and termination.
 - 1. The Contractor shall seek to observe any such use on the part of its employees or those of any supplier or subcontractor present on District property. The Contractor shall report any such observation to local authorities and shall so notify the District.
 - 2. The Contractor shall immediately discipline persons observed to have used alcohol or drugs either on District property or prior to arrival on District property. Discipline may include termination.
- D. All Contractor and subcontractor employees shall wear bright orange construction vests at all times while on job site.

Part 3. Execution

3.01 General

- A. All Site Safety Features shall be in place and operable prior to start of construction.
- B. Ongoing Site / Material and equipment Safety practices shall be instituted at appropriate times as required for any particular construction operation.
- C. Site Safety features, components, practices and documentation are required to be current and applicable in order to facilitate approval of monthly Application for Payment

End of Section

Basic Product Requirements

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Product Requirements	<ul style="list-style-type: none"> • Expectations regarding product selections
B.	Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 General

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and references standards as minimum requirements.
- C. Provide items that are undamaged, and are new at the time of installation.
- D. Provide products and equipment complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
- E. Do not attach manufacturer's labels or trademarks, except for required nameplates, on surfaces exposed to view in occupied spaces or on the exterior.
- F. All products shall be shipped and handled so as to protect the interests of the District as regards to Product Warranty and longevity.

2.02 Selection

- A. Select products as follows:
 1. Where these Specifications name only a single product or manufacturer, provide the item indicated. No substitutions will be permitted.
 2. Where these Specifications name 2 or more products or manufacturers, provide 1 of the items indicated. No substitutions will be permitted.
 3. Where products or manufacturers are specified by name, accompanied by the term "or equal," comply with provisions concerning "product substitutions" to obtain approval for use of an unnamed product or manufacturer.
 - (a) Refer to Product Substitutions section of Division 1.

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4. Where these Specifications describe a product and list characteristics required, with or without naming a brand or trademark, provide a product that complies with the characteristics and other requirements.
 5. Where these Specifications require compliance with performance requirements, provide products that comply and are recommended in writing by the manufacturer for the application.
 6. Where these Specifications require compliance with codes, regulations, or reference standards, select a product that complies with the codes, regulations, or reference standards.
- B. Unless otherwise indicated, Architect will select color, pattern, and texture of any product from manufacturer's full range of options.
1. Unless otherwise specified, the Architect shall not be limited to "standard" options. Premium colors, textures or other features may be selected based on any such choice offered by the manufacturer.

2.03 Specified Manufacturers

- A. In accordance with California Public Contract Code section 3400, any item listed in this Specification with only one manufacturer has been specified in order to match others currently in use by the District, therefore no equals exist.
- B. Where multiple manufacturers are listed, substitutions of items with the same function, performance and appearance are acceptable in accordance with Division 1 Sections.

2.04 Expectation

- A. It is the expectation of this Contract that all materials specified or implied in the Contract Documents will provide the District with the full service life and performance indicated or implied by the manufacturer.
1. This shall require that all products, materials and assemblies are installed properly and according to industry standard and manufacturer instructions on the first installation.
 2. Re-installation based on rejection of any work related to this product or to substrate products may be grounds for determination that the service life has been reduced and may result in rejection of the product under this paragraph.
- B. It is the expectation of this Contract that no action on the part of the Contractor shall reduce the service life, performance or visual quality of any of the Products specified or implied.
- C. The Architect retains the right to reject any product that appears to have been mishandled or otherwise dispatched such that service life appears to have been reduced.

Part 3. Execution

3.01 Not Used

End of Section

Product Options and Substitutions

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Option Procedures	<ul style="list-style-type: none"> • Identification of Options selected from listed materials and products specified in other Sections of this Specification
Substitution Procedures	<ul style="list-style-type: none"> • Procedures for requesting Substitution of unlisted materials in lieu of materials named in Specification or approved for use in addenda.

- B. *Bidders and selected contractor are required to prove to the Architect, and District that any proposed substitutions are equal to proprietary items specified. If validation is not provided, a substitution will not be approved. Also described below are timelines for submittal and acceptance of substitutions. Meeting these requirements is critical to ensure fairness amongst bidders.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.
 1. Catalog Cuts: Provide manufacturers product information for all components required for manufacture and fabrication, including but not limited to the following:
 2. Samples: Provide samples for initial selection purposes in form of manufacturer's color charts, actual units or sections of units, products or assemblies. Provide samples showing full range of colors, textures, and patterns available for each type of material indicated including but not limited to the following:
 3. Shop Drawings: Provide shop drawings showing location of each item, dimensioned plans and elevations, installation components, accessories including but not limited to following:
 4. Product Data: Provide product data for each type of product and process specified in this section and incorporated into items of architectural woodwork during fabrication, finishing, and installation:
 5. Schedule: Provide Schedule defining location, installation, sequence or other information including, but not limited to, the following:

Product List	<ul style="list-style-type: none"> • Within 30 days after award of Contract, submit a complete list of major products which are proposed for installation, with name of manufacturer, trade name, and model.
Catalog Cuts	<ul style="list-style-type: none"> • Per Specification Section describing Options • For all Substitutions
Samples	<ul style="list-style-type: none"> • Per Specification Section describing Options • For all Substitutions
Shop Drawings	<ul style="list-style-type: none"> • Per Specification Section describing Options • For all Substitutions where appropriate or as directed by Architect
Product Data	<ul style="list-style-type: none"> • Per Specification Section describing Options • For all Substitutions
Schedule	<ul style="list-style-type: none"> • Provide Schedule of Submittals within 14 Days after award of contract. <i>THIS IS A REQUIREMENT OF THE CONTRACT. Bidders that do not intend to meet this requirement should not submit a bid.</i>

Part 2. Requirements

2.01 Specified Manufacturers

- A. In accordance with California Public Contract Code section 3400, any item listed in this Specification with only one manufacturer has been specified in order to match others currently in use by the District, therefore no equals exist.
- B. Where multiple manufacturers are listed, substitutions of items with the same function, performance and appearance are acceptable in accordance with Division 1 Sections.

2.02 Contractor's Options:

- A. For products specified only by reference standard, select product meeting referenced standard.
- B. For products specified by naming one or more products or manufacturers, select products of any named manufacturer meeting specifications.
- C. For product or manufacturer which is not specifically named submit request for substitution.
- D. Where terms "or equal", or "approved equal," or similar references are made, submit request for substitution for product or manufacturer not specifically named in specifications.

2.03 Substitutions During Bidding:

- A. During bidding period, Architect will consider formal request from manufacturer's representatives, suppliers, subcontractors and bidding contractors.
- B. Contractors shall base proposals on products and systems specified in Contract Documents or listed by name in addenda. Submit request for substitution in writing at least 7 calendar days prior to submission of bids for a particular portion of work.
- C. Formal requests shall be in writing and shall provide sufficient information for review.
- D. Acceptable substitutions will be listed in addenda.

2.04 Substitutions After Award of Contract

- A. Reasonable and timely requests for substitutions will be considered. Substitutions include changes proposed by the Contractor after award of the Contract, in products and methods of construction required by the Contract Documents.
- B. Within a period of 30 days after award of Contract, Architect will consider formal request for substitutions only from Contractor.
 - 1. After initial period, requests will be considered only when a product becomes unavailable due to no fault of Contractor.
- C. Procedure:
 - 1. Do not submit unapproved substitutions on Shop drawings.
 - 2. Submit 4 copies of each request for product substitution. Identify product to be replaced, provide complete documentation showing compliance of proposed substitution with all specified requirements, and include the following:
 - (a) A full comparison with the specified product.
 - (b) A list of changes to other Work required to accommodate the substitution. Note effect of substitution on other work, products, or if acceptance of substitution could require revision of drawings, details or specifications.
 - (c) Any proposed changes in the Contract Sum or Contract Time should the substitution be accepted. Include accurate cost data comparing proposed substitution with products and amount of net change in Contract price.
 - 3. Architect will review the proposed substitution and notify Contractor of its acceptance or rejection.
 - 4. Submit separate request for each product and support each request with product identification with manufacturer's literature and samples where applicable.
- D. Substitutions will not be considered for acceptance when:
 - 1. They are indicated or implied on submittals without a formal request from Contractor.
 - 2. They are requested directly by a subcontractor or supplier.
 - 3. Acceptance will require substantial revision of Contract Documents.
- E. Substitute products shall not be ordered without written acceptance of Architect.
- F. Architect will determine acceptability of proposed substitutions and reserves right to reject proposals due to insufficient information.

2.05 Coordination

- A. Substitutions requested by the Contractor shall constitute a change to the design in which the Contractor assumes responsibility for the design components related to the substitution.
- B. Acceptance of any Substitution proposed by the Contractor shall not imply that responsibility for coordination shall pass to the Architect. Any Substitution proposed by the Contractor shall require that the Contractor has fully reviewed the product in question, its installation and application procedures and its compatibility with related products.
 - 1. The Architect may subsequently reject a Substitution after approval and installation if that substitution results in either failure or reduction in quality of any related material, product or assembly.
 - 2. Rejection for this reason will require that the Contractor revert to the originally specified material, product or assembly and re-install according to the original Contract requirements.

Part 3. Execution

A. Not Used

End of Section

Owner Furnished Products

Part 1. General

1.01 Summary

- A. Description: The Owner shall procure and provide certain products for installation as shown and specified per Contract Documents.
- B. Related work specified elsewhere:
 - 1. General: Products furnished and paid for by the Owner are described in the following technical sections and /or in the Drawings.
 - 2. District Supplied Material
 - (a) Note that this project includes the installation of owner-supplied material; the District has acquired roofing material through the CMAS (California Multiple Award Schedules) program.

1.02 Definitions

- A. General: The following are used to identify products as noted on the Drawings.
- B. Owner Furnished Contractor Installed (O.F.C.I.): Products or equipment furnished by the Owner for installation under this contract.
- C. Owner Furnished Owner Installed (O.F.O.I.): Products or equipment to be provided and installed by the Owner, but requiring surfacing, backing, utility connections or other preparation under this contract, for proper installation.
- D. Not In Contract (N.I.C.): Products or equipment to be provided and installed by Owner, not requiring surfacing, backing, utility connections or other preparation under this contract.

Part 2. Products

2.01 ROOFING MATERIAL FURNISHED BY OWNER (O.F.C.I.): District supplied material through the CMAS (California Multiple Award Schedules) program. Related specification sections include;

- A. Section 07 52 00 Modified Bituminous Membrane Roofing
- B. Section 07 62 00 Sheet Metal Flashing and Trim
- D. Section 07 63 50 Gutters and Downspouts

2.02 MATERIAL LIST

The following list is intended to provide approximately 75% of the materials required to complete the scope of work defined in these contract documents. Any material or accessories required for the installation of the roof system in excess of the district provided material must be supplied by the Contractor. It is up to the Contractor to determine the precise amount of material required for the completion of this project; and to provide excess material, as required. The cost to handle and break flashing metal from the District provided flat stock is contractor's responsibility

250 - Stressbase 120, 1 sq. roll
30 - Stressbase 80, 1.5 sq.roll
80 - HPR Glasbase 3sq. Roll
120 – Green Lock Membrane Adhesive 5 gal
35 – Green Lock Flashing adhesive 3.5 gal
30 - KEE Stone 60 mil FB, 8 sq.roll
4 - KEE Stone 60 mil FB, 4 sq.roll
10 - KEE Stone Flashing FB, 2 sq. roll
10 - KEE Stone Utility 25 sq.ft. roll
15 - Solar Brite KEE 60 mil Membrane 5' x 100'
10 - KEE Inside Corners
20 - KEE Outside Corners
14 - KEE Foam Box Set 20 sq.
3 - KEE Sealant 24 tubes/case
3 - KEE Flashing Detail Non-Reinforced 24" x 100'
5 - T Joint Covers (100/case)
4- Tuff Stuff Sealant, 24 tubes/case (White)
23,040 SF – ½" DensDeck Prime Board 4'x8' (24 pallets)

Part 3. Execution

- 3.01 Submittals:** Arrange for and deliver necessary shop drawings, product data and samples to Contractor.
- 3.02 Delivery:**
- A. General: Arrange and pay for product delivery to site, in accordance with construction schedule.
 - B. Bill of Materials: Deliver supplier's documentation to Contractor.
 - C. Inspection: Inspect jointly with Contractor.
 - D. Claims: Submit for transportation damage and replacement of otherwise damaged, defective, or missing items.
- 3.03 Guarantees:** Arrange for manufacturer's warranties, bonds, service, and inspections, as required.

3.04 Contractor's Responsibilities

- A. Submittals: Review shop drawings, product data and samples and submit to Architect with notification of any discrepancies or problems anticipated in use of product.

3.05 DELIVERY

- A. General: Designate delivery date for each product in Progress Schedule.
- B. Receiving: Receive and unload products at site. Handle products at site, including uncrating and storage.
- C. Inspection: Promptly inspect products jointly with Owner; record shortages, damaged or defective items.
- D. Storage: Protect products from damage or exposure to elements.

3.06 Installation

- A. General: Assemble, install, connect, adjust and finish products, as stipulated in the respective section of Specifications.
- B. Repair and Replacement: Items damaged during handling and installation are the responsibility of contractor.

End of Section

Product Storage and Handling

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Product Handling	<ul style="list-style-type: none"> • Transportation and Handling • Storage and Protection • Shipping and Delivery Limitations • Expectation

- B. *The contractor is responsible for storage and handling of materials. If an item has been delivered and contractor shows that it has been and is in a safe / insured location, the contractor may invoice for those items. A contractor should not assume that there is not space on campus for storage of materials. (do not assume space is available either). Contractor shall contact Architect to determine if materials can be stored on site.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Transportation and Handling

- A. Deliver, store, and handle products according to manufacturer's written instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.
- B. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- C. Provide equipment and personnel to handle products to prevent spoiling or damage. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

2.02 Storage and Protection

- A. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces.
 - 1. Products delivered prior to readiness for either installation or proper storage may be rejected by the Architect.

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- B. Deliver in manufacturer's original sealed packaging with labels and written instructions for handling, storing, protecting, and installing.
 - C. Inspect to ensure compliance with the Contract Documents and to ensure items are undamaged and properly protected.
 - D. Store heavy items in a manner that will not endanger supporting construction.
 - E. Store items subject to damage aboveground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required.
 - F. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
 - G. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

2.03 Moisture Protection

- A. All materials and products shall be protected from moisture. Moisture includes precipitation, runoff, condensation and atmospheric humidity.
 - 1. Products shall be stored in dry locations and shall be wrapped according to manufacturer's instructions.
 - 2. Contractor shall reject any delivery of products when dry storage space is not available.
- B. Products shall be stored in interior locations where feasible.
 - 1. When interior locations are exposed to the weather, due to open walls, doors or windows, such spaces shall be considered exterior spaces for purposes of this Section.
- C. Products exposed to moisture may be rejected without further testing.
 - 1. Products exhibiting any signs of moisture, such as staining, dampness, mold; may be rejected without further testing.
- D. Contractor shall adjust storage methods for seasonal changes in site conditions.
 - 1. Contractor shall provide additional protection in winter months.
 - 2. Building interiors that are not weather tight shall be considered exterior spaces in winter months.
- E. If any portion of the building or any products are exposed to moisture, the District may require testing for damage and mold growth. Cost of testing, as well as any required mitigation shall be the responsibility of the Contractor.

2.04 Expectation

- A. It is the expectation of this Contract that all materials specified or implied in the Contract Documents will provide the District with the full service life and performance indicated or implied by the manufacturer.
- B. It is the expectation of this Contract that no action on the part of the Contractor shall reduce the service life, performance or visual quality of any of the Products specified or implied.
- C. The Architect retains the right to reject any product that appears to have been mishandled or otherwise dispatched such that service life appears to have been reduced.

Part 3. Execution

3.01 Shipping and Delivery Limitations

- A. All products and materials shall be received by the Contractor at the Work Zone or at the Contractor's private facilities.
 - 1. No products may be received by the School Site or the District.
 - 2. Suppliers shall be instructed NOT to make deliveries or delivery inquiries at the School Office or District Office unless explicitly instructed to do so by the Architect.

End of Section

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Preparation

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Field Engineering	<ul style="list-style-type: none"> • Construction Layout • Topographic Controls • Ongoing Horizontal and Vertical Control
Protection of Adjacent Construction	<ul style="list-style-type: none"> • Existing Construction Protection and Isolation • Landscape Protection
Existing Utility Location	<ul style="list-style-type: none"> • Provide locator service and marking of all existing site utilities.

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Quality Assurance

- A. Provide the following per Division 1

Item	Description
Supervision	<ul style="list-style-type: none"> • Full time supervision and observation by the Contractor of all on-site Construction Activities including ordering, procurement and delivery of all materials and products manufactured or assembled off-site.
Qualifications of Workers	<ul style="list-style-type: none"> • General Contractor shall ensure that all workers providing labor on this project are fully competent and experienced in the area of work being performed. General Contractor shall require subcontractors to remove any unqualified workers from the project. • Provide staff and equipment as required to adequately assess and control all layout and dimensions. • Provide staff adequately trained and experienced in surveying and topographic assessment. • Provide staff qualified to locate underground utilities.

Product Acceptance	<ul style="list-style-type: none"> General Contractor (Superintendent) shall verify and accept all products delivered to site prior to installation.
Substrate Acceptance	<ul style="list-style-type: none"> General Contractor (Superintendent) shall verify all substrates / conditions prior to allowing installation of any item.
Structural calculations	<ul style="list-style-type: none"> Provide structural calculations as required to meet California Building Code. Calculations shall be by a Structural Engineer licensed in the state of California. Fabrication drawings shall be stamped by a California Licensed Structural Engineer.

Part 2. Requirements

2.01 Field Engineering

- A. All Field Engineering shall utilize the full breadth of the Contract Documents as dimensional resource for establishing layout and dimensional requirements.
- B. Field Engineering activities shall include coordination and verification of dimensional requirements throughout the document set and across the documents prepared by the various design disciplines.
- C. Establishment of base points
 1. Locate building / site layout base point and clearly mark in the field.
 2. Provide semi-permanent monument to be utilized for duration of construction
- D. Site layout and controls
 1. Provide all layout, dimension control and datum location as required to translate the design intentions of the documents to the actual site layout.
 2. Provide semi-permanent monuments for all established lines and levels as required to control construction of the building and installations of site utilities.
- E. Topographic controls
 1. Provide all vertical controls for grading, excavation, utility installation and building construction.
 2. Include all controls for underground utilities.
- F. Ongoing horizontal controls
 1. Provide ongoing horizontal controls for all building layout and dimension control not readily established by routine construction methods.
 2. Maintain all building gridlines and layout points for access by all trades as necessary for the completion of their work

2.02 Protection

- A. Provide all necessary covering, shielding, screening required to protect adjacent construction from damage during the work of this contract.
 1. Refer to Security and Safety section of Division 1.
- B. Provide all fencing and barricades required to prevent materials and labor forces from damaging existing site and interior areas during construction.
 1. Refer to Security and Safety section of Division 1.

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- C. Provide dust control measures to prevent both exterior and interior construction dust from penetrating adjacent interior areas or from contaminating exterior areas.
 - 1. Dust control shall include, but not be limited to:
 - (a) Tarps and coverings
 - (b) Sealing of exterior openings
 - (c) Restricted work hours for specific tasks.
 - (d) Temporary ventilation by means of openings or mechanical ventilation.
 - (e) Other means as necessary to prevent dust from affecting areas outside the Work Zone.
 - D. Protect existing landscaping from damage during construction. (at areas that may be effected due to deliveries)
 - 1. Provide barriers, tree fencing and temporary irrigation where necessary.
 - 2. Coordinate all site operations with regard for existing landscaping.
 - 3. Remove plants and turf materials where necessary and stockpile for future replacement.
 - (a) Removal and storage of plant materials shall be directed by the Architect and shall be done in such a manner as to ensure survival.
 - 4. Protect existing storm water catchment and sewer system from erosion and runoff from construction operations by means of sand bags, silt fencing, or filter fabrics as may be most effective.

2.03 Utility Location and Marking

- A. Contractor shall provide for location of all existing site utilities.
 - 1. Employ a locator service to locate and identify underground utilities by any means necessary.
 - 2. Provide USA service as necessary for utilities belonging to other entities that may occur in the work zone or be affected by the Work of this project.
 - 3. Provide physical location via sensing equipment, excavation or other means to locate utilities.
- B. Architect may be able to provide drawings of existing facilities upon written request.
 - 1. Existing drawings shall not be relied upon for accuracy of utility location. They are schematic in nature and have not been verified by field investigation unless explicitly indicated.
 - 2. Contractor is responsible for locating all utilities as part of this contract. Reliance on the existing drawings shall not constitute adequate provision of location services.
 - 3. Damage to existing utilities based on failure to adequately locate and mark utilities shall be the responsibility of the Contractor.
 - 4. Damage to existing facilities by the Contractor in areas not in the scope of the contract shall be the responsibility of the Contractor.

Part 3. Execution

- A. Not Used

End of Section

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Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Examination and Preparation	<ul style="list-style-type: none">• Management of Construction Sequence• Acceptance of Substrate
Cutting and Patching	<ul style="list-style-type: none">• All incidental cutting and patching
Installation	<ul style="list-style-type: none">• Installation coordination, sequencing and verification
Systems Connection	<ul style="list-style-type: none">• Connection of all new or modified utilities and systems to existing
Field Verification	<ul style="list-style-type: none">• Dimensional and locational management

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Examination and Preparation

- A. Contractor is responsible for examining all areas, surfaces, existing and new construction prior to the installation of any subsequent construction or materials to determine whether these areas are ready to receive subsequent construction.
 - 1. Examine substrates and conditions for compliance with manufacturer's written requirements including, but not limited to, surfaces that are sound, level, and plumb; substrates within installation tolerances; surfaces that are smooth, clean, and free of deleterious substances; and application conditions within environmental limits. Do not proceed with installation until unsatisfactory conditions have been corrected.
 - 2. Installation of work over any substrate by any personnel represents acceptance of that substrate by the trade installing over substrate.
 - 3. Prepare substrates and adjoining surfaces according to manufacturer's written instructions, including, but not limited to, the application of fillers and primers.
- B. Contractor is responsible to insure that all construction sequences occur over areas that have been completed and are physically capable of accepting subsequent construction.

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- C. Contractor is required to insure that all fabricators, installers and labor forces prepare work in proper sequence and method to achieve completed work of quality and durability intended by the Contract Documents.
 - D. Contractor is responsible for scheduling and obtaining approval from Project Inspector for work that will be covered by subsequent construction.

2.02 Coordination

- A. Contractor shall provide full coordination with Architect for District installed or provided items
 - 1. Scheduling of District Performed Tasks
 - (a) Contractor shall include these District performed tasks in contract schedule so that District can mobilize and complete work when needed in order to not hinder Contractor's schedule.
 - (b) Contractor shall notify Architect two (2) weeks prior to work required by District. For installations requiring longer lead time, contractor shall provide adequate notification to allow ordering of materials.
- B. Contractor is responsible for coordination of the physical location of components provided and installed by various trades.
 - 1. Coordination shall be based on the understanding of each trade of the requirements for clearances, access, and functional characteristics of other items. Installation by any trade shall in no way limit the functional performance of any other item.
- C. Contractor shall insure that installation locations of trade items do not conflict with the items of other trades and do not prevent the installation of items from other trades as required by these documents.
- D. Contractor is responsible for the relocation and re-installation of any item installed without regard for the subsequent installation of work by another trade.
- E. For conflicts based on conflicts in these documents, the Contractor shall notify the Architect requesting resolution. For all other conflicts based on erroneous installation by a trade, the Contractor shall take corrective action so as not to delay the progress of the Work at no additional cost.

2.03 Cutting and Patching

- A. Contractor is responsible for all incidental aspects of the Work which may require cutting and patching but which do not specifically appear elsewhere in the Documents.
- B. Contractor shall provide all incidental or required cutting and patching of materials, assemblies and components not covered explicitly or implicitly in other Sections of this Specification.
- C. Where incidental cutting and patching is required for the installation of a specific item or piece of equipment (including piping, ductwork, conduit, etc.), all such cutting and patching is considered to be specified as a part of the Section requiring the cutting and patching.
- D. Contractor is responsible for all incidental repairs that may be required as part of normal or deficient construction operations not covered elsewhere in these Specifications.
- E. Where the work requires that a particular existing building element such as a ceiling, partition, wall, floor, door, window, or similar element of existing building construction be removed, it may be covered in Demolition sections of this Specification.

2.04 Protection

- A. Provide all necessary covering, shielding, screening required to protect adjacent construction from damage during the work of this contract.
 - 1. Refer to Security & Safety section of Division 1.
- B. Provide all fencing and barricades required to prevent materials and labor forces from damaging existing site and interior areas during construction.
 - 1. Refer to Security & Safety section of Division 1.
- C. Provide dust control measures to prevent both exterior and interior construction dust from penetrating adjacent interior areas or from contaminating exterior areas.
 - 1. Dust control shall include, but not be limited to:
 - (a) Watering
 - (b) Tarps and coverings
 - (c) Sealing of exterior openings
 - (d) Restricted work hours for specific tasks.
 - (e) Other means as necessary to prevent dust from affecting areas outside the Work Zone.
- D. Protect existing landscaping from damage during construction.
 - 1. Provide barriers, tree fencing and temporary irrigation where necessary.
 - 2. Coordinate all site operations with regard for existing landscaping.
 - 3. Remove plants and turf materials where necessary and stockpile for future replacement.
 - (a) Removal and storage of plant materials shall be directed by the Architect and shall be done in such a manner as to ensure survival.
 - 4. The Contractor is responsible for executing all such work whether or not it is specified in the appropriate Section.

2.05 Cutting and Removal

- A. Contractor shall verify and check all areas to be cut and patched and shall coordinate the work of the various trades involved.
- B. Where existing resilient flooring, ceramic tile, and other similar adhesive or thin-set applied finishes are required, or where substrate will remain exposed, all adhesives, mortars, fasteners, etc., shall be ground, stoned, sanded, or removed to the extent that no ridges, lumps, or other protrusions will telegraph through surface of new finish or be apparent when the substrate is left exposed.
- C. Where doubt exists as to the size, location, or method of cutting concrete or any other structural element, Contractor shall contact Architect before proceeding.
- D. Do not cut structural members without prior written approval of Architect.

2.06 Patching and Repairing

- A. Unless specifically designated otherwise, existing work, cut, altered, or revised to accommodate new work, shall be patched to duplicate undisturbed adjacent finishes, colors, textures & profiles; new work in existing portions shall also be finished to match adjacent existing work unless noted otherwise.
- B. Where alteration or construction work disturbs existing adjacent finishes, replace with like finish matching appearance, quality, and performance.
- C. Should any existing finish to be matched be "out-of-production" or otherwise unavailable material, obtain Architect's specific approval of any substitution.

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- D. Provide all primers, sealers, underlayment, supports, backing, blocking, furring, suspension systems, etc., required for any purpose in patching existing work.
 - E. For patching, provide materials whose installed performance will equal or surpass that of existing materials. For exposed surfaces, provide or finish materials to visually match existing adjacent surfaces to the fullest extent possible.
 - F. Patch closures at former openings of fixtures, etc., match adjacent finish, profiles of undisturbed work.
 - G. Finish painting in patched areas shall not present a spotty appearance. Carry finish over complete surface plane in each instance.
 - H. Except where size of patch or fill requires use of concrete mix, do all patching of concrete slab surfaces with epoxy/sand patching mortar or latex based patching and leveling compounds.
 - I. Patch all holes and voids in existing plaster surfaces where such surfaces are to be exposed in the finished work, where necessary to provide a proper surface for application of new finish materials and/or where necessary to maintain required fire ratings.

2.07 Installation

- A. Contractor is responsible for proper installation of all materials, systems, equipment and components.
- B. Contractor shall provide adequate inspection, observation, supervision and management as necessary to insure that all such components are installed properly and per manufacturers' instructions.
- C. Comply with manufacturer's written instructions for installation. Anchor each product securely in place, accurately located and aligned. Clean exposed surfaces and protect from damage. If applicable, prepare surfaces for field finishing.
- D. Comply with NFPA 70 for installation of electrically operated equipment and electrical components and materials.
- E. Routing and Location
 - 1. All components shall be located per drawings and specifications.
 - 2. Where location is not clearly indicated, Contractor shall specifically coordinate location with Architect.
 - 3. Contractor shall review the following for specific location coordination when not explicitly shown on the drawings:
 - (a) Surface mounted conduits, raceways and other electrical equipment
 - (b) Surface mounted communications and data equipment.
 - (c) Location of boxes, outlets, connections and terminals
 - (d) Location of panels, controllers and enunciators
 - 4. All routing is intended to occur in the least visibly offensive location (as determined by the Architect, not the Contractor). Routing of raceways shall occur in corners, niches, behind cabinets and any other place where it will not stand out.
 - (a) The Contractor will be required to remove any raceway, conduit or related appurtenance that is mounted across the middle of a wall for no other reason than convenience for the installer.
- F. Removal of Existing Equipment

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1. Where existing equipment is being replaced by new equipment, remove all abandoned equipment, raceways, conduits and related boxes and attachments.
 2. Repair surfaces where equipment was removed.
- G. All new and modified systems, utilities and components shall be fully tied into existing systems and shall be fully operational at the time of Substantial Completion.
1. Contractor is responsible for full connection of communications, data, and energy management, signal and clock systems.
 2. Contractor shall coordinate the work of this project to ensure that necessary raceways, routing and building penetrations occur to make successful connections of all systems to other buildings or utility locations.
- H. Contractor shall insure that all materials, products and assemblies are installed according to the following:
1. True, level, plumb and securely attached.
 2. Properly aligned with substrate, adjacent construction and related products and assemblies.
 3. Flush aligned with adjacent materials where indicated.
 4. Materials, products and assemblies shall not be installed damaged, warped, deflected, distorted, bent, dented, scratched, smudged, fingerprinted, smeared, binding, jammed, twisted, crammed, forced, loose, hanging, off-kilter, etc. unless specifically instructed to do so by this Specification or by the Architect.

2.08 Field Verification

- A. Contractor is responsible to achieve all dimensional and location intentions represented anywhere in the Contract Documents. Contractor shall provide adequate observation and supervision to ensure that all installers and labor forces adhere to location requirements shown in the documents.
- B. Continually check and compare dimensions at the site with those shown on the Drawings. Immediately bring discrepancies to the attention of the Architect in writing.
- C. Mark on shop drawings, prior to submission to the Architect, all relevant field dimensions and note any conflicts with the submitted material.

Part 3. Execution

- A. Not Used

End of Section

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Cleaning

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Progress Cleaning	<ul style="list-style-type: none"> • General Cleaning • Specific Product and Assembly Cleaning
Final Cleaning	<ul style="list-style-type: none"> • Final Cleaning and Preparation for Occupancy
Site Maintenance	<ul style="list-style-type: none"> • Ongoing Site Maintenance • Maintenance of Partially Completed Site Systems

- B. *The Contractor is responsible for keeping the jobsite clean and organized. A clean and organized jobsite is a component of a safe jobsite. As a public school facility, it is imperative that job debris be kept hidden from public view. Daily cleaning of the job site is a requirement. Schedule or coordination issues is not an adequate excuse for disregarding these requirements.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Progress Cleaning

- A. Provide materials and labor as necessary to maintain the site and existing buildings in a neat and orderly manner.
 - 1. Remove trash from Work Zone perimeters on a daily basis.
 - 2. Remove trash from entire Work Zone on a weekly basis.
- B. Provide cleaning of all adjacent site and building areas where ongoing construction operations have caused dust or debris to fall on them.
 - 1. Clean up of debris occurring outside the Work Zone shall occur immediately.
 - 2. Debris remaining for more than 24 hours may be removed by the District and the expense shall be back charged to the Contractor.

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- C. Provide for any incidental cleaning that may be required as the result of specific construction operations causing dust or debris to locate in occupied areas of the site or adjacent buildings.

- 1. Contractor shall provide weekly inspection of adjacent site areas for dust and debris.

2.02 Final Cleaning

- A. Provide materials and labor as necessary to complete final cleaning in preparation for Substantial Completion and Final Completion. Final Cleaning shall include all surfaces and assemblies and shall leave the facility, site and adjacent buildings and all areas affected by construction operations in any way clean and ready for use by the District.

- 1. All areas of the Work Zone shall appear as new.

- B. Mechanical System shall be operated prior to Final Cleaning for a period of time sufficient for construction dust to be fully removed from the system.

- 1. Min 24 hours

2.03 Site Maintenance

- A. Where Site Amenities and Landscaping exist within the work zone and these amenities or landscaping are intended to remain after the completion of construction, the Contractor shall provide materials and labor as necessary to maintain such items in clean and working conditions.
- B. Landscaping shall be maintained, watered, fertilized if necessary, to insure healthy and continued life after completion of construction.
- C. Contractor shall provide temporary watering and fertilization as necessary.
- D. Contractor shall coordinate with the District regarding specific requirements, access to water and specific materials.

Part 3. Execution

3.01 General Cleaning

- A. Follow the recommendation of the manufacturer of the materials and items to be cleaned for all cleaning, polishing, and treatment materials and supplies.
 - 1. Do not use chemicals or cleaners that will damage any surface, finish, or component in any assembly.
 - 2. Damage as a result of cleaning will be the sole responsibility of the Contractor.
- B. Cleaning methods for proprietary materials shall be in strict accordance with manufacturer's instructions. Cleaning solutions, agents, solvents, waxes, or other materials shall be only as approved by manufacturer of the material installed in the work.
- C. Materials for cleaning existing construction shall be approved in writing by the District.

3.02 Site Cleaning

- A. Remove all construction equipment from site.
- B. Remove all remaining demolition materials from site.
- C. Remove all construction debris from site.
- D. The Contractor shall also clean any areas adjacent to the work zone in which dust or debris has been tracked by building users and employees as a result of inadequate daily cleaning procedures by the Contractor.

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1. Daily procedures shall be utilized to prevent the spread of dirt throughout the building. The District will fully exercise all rights under this provision to ensure adequate clean-up.

3.03 Dust Control

- A. Maintain dust control during entire project duration.
 1. Provide site watering during excavation and grading
 2. Provide site watering during cleanup and seeping activities.
 3. Provide tarps and other enclosures around areas of the work that will generated high levels of dust.
 4. Provide plastic enclosure of rooms, windows, doors where dust may carry to other parts of the school site.
- B. Maintain dust control during final cleaning. Ensure that exterior clean-up operations, including street sweeping, do not contaminate interior spaces, both existing and new.
 1. Provide specific measures to ensure that existing draperies remain free of construction dust.
- C. After final cleaning, all existing landscaping shall be washed with clean water to remove surface dust from leaves.

3.04 Repairs

- A. Repair all building components damaged as a result of construction operations.
 1. Repair damage to any new or existing cabinetry, woodwork and interior finishes
 2. Repair all surfaces where temporary attachments occurred, such as shoring or temporary barricades. Repairs shall be appropriate to the material damaged and the extent of the damage.
 3. The Architect retains the right to reject any repair method not adequate to return the subject material or surface to its original condition.

3.05 Site Maintenance

- A. Provide temporary irrigation for existing landscaping to remain located within the work zone.
 1. Provide coordination with the District to acquire and apply any necessary fertilizers, supplements to insure continued health of plant material.
 2. Provide barricades as necessary to protect trees and vegetation.
 3. Provide any necessary erosion control measures to prevent the occurrence of silt in the storm water system and to minimize physical damage to existing site grading.

End of Section

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Contract Close-Out Procedures

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Closeout Procedures	<ul style="list-style-type: none"> • Substantial completion • Final completion • Final cleaning • Systems demonstration

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

Part 2. Requirements

2.01 Substantial Completion

- A. Contractor shall be responsible to achieve Substantial Completion per the terms of the Contract regarding time. Substantial completion shall be considered based on beneficial occupancy by the Owner and shall require that the Owner can occupy and utilize the facilities. Beneficial occupancy means that all items required by the contract documents are completed. Owner may occupy the space but this does not necessarily denote "Beneficial" occupancy.
- B. When Contractor considers the Work to be Substantially Complete, he shall notify the Architect per the requirements of Part 3.
- C. The Architect shall determine if the Work is Substantially Complete based on detailed Review per Part 3 and shall notify the Contractor.
- D. Should Architect determine Work is not Substantially Complete, Contractor will be promptly notified in writing, giving reasons. Contractor shall pay for time and direct expenses of District representative and Architect where more than two substantial completion inspections are required. Note that this includes PI time.
- E. When Architect determines the Work is Substantially Complete, a Certificate of Substantial Completion will be prepared in accordance with General Conditions. This shall represent the effective completion date of the Work for Contract purposes.

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- F. Substantial Completion shall include provision of all documents, certifications, tests, manuals and warranties required for Beneficial Occupancy of the project.

2.02 Final Completion

- A. Final Completion shall represent the termination of the contract and cessation of active work under the contract, except for Commissioning, Warranty and claims work that may occur.
- B. Final Completion shall occur only after:
1. Work has been inspected for compliance with Contract Documents.
 2. Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected.
 3. Equipment and systems have been tested in presence of Owner's representative and are operational.
 4. Work is complete and ready for Final Inspection.
 5. Required documents have been submitted, including those required by surety, governing agencies and any other provision of the Contract Documents.
- C. When Architect finds Work is acceptable and final submittal is complete, a final Change Order will be issued reflecting approved adjustments to Contract sum not previously made by Change Order.

Part 3. Execution

3.01 Closeout Sequence

- A. The following describes the sequence of events that comprise project closeout procedures:

1	Request For Substantial Completion	Submitted by Contractor to Architect Include list of outstanding items requiring completion.
2	Preliminary Review of Substantial Completion	Determination by Architect as to the readiness of the Work for Substantial Completion Inspection (punch list).
3	Pre-Substantial Completion Tasks	Cleaning Submittal of Record Documents
4	Substantial Completion Review (Punch List)	Detailed review of Work by Architect and publication of Punch List defining all remaining Project requirements.
5	Completion / Correction Period	Completion of all Work listed in Punch List
6	Substantial Completion	Certificate Issued upon successful completion of Punch list Transfer of Responsibilities to Owner Completion date established for purposes of tracking Liquidated Damages, For start of

Warranty period.

7	Preparation for Final Review	Correction of all deficiencies listed on Certificate of Substantial Completion. Final Cleaning Request for Final Inspection submitted to Architect by Contractor.
8	Final Inspection	Final Inspection to determine completion of all Contract requirements.
9	Final Completion	Notices Unconditional Release Consent of Surety Recording of Documents DSA Documentation
10	Final Payment Application	Application Processing Payment
11	Post Construction	Maintenance Periods Warranty Monitoring

3.02 Request for Substantial Completion

- A. The Contractor shall submit to the Architect a written request for Certification of Substantial Completion. Included as Request For Readiness in the Appendix.
 - 1. Request shall include a list of all outstanding items requiring completion or correction as determined by the Contractor as well as anticipated completion dates for those items.

3.03 Determination by Architect

- A. The Architect shall review the level of completion of the Work to determine if the Work is ready for Substantial Completion Review.
 - 1. Review shall be based on the contents of the request for Readiness, the Architect's direct knowledge of the progress of the work and any necessary Reviews that may be required.
- B. The Architect shall make one of the following determinations. Either finding shall not constitute Substantial Completion for Contract purposes
 - 1. The work appears to be ready for the Substantial Completion Review (Punch List). Architect will issue Notice of Readiness to Contractor.
 - 2. The work does not appear to be ready for the Substantial Completion Inspection. Architect will not issue notice of Readiness. (Request for Readiness will be returned)
- C. Punch list will be developed subsequent to Architect's issuance of Notice of Readiness.
- D. The Architect will prepare a Punch List for use by the Contractor
 - 1. The Punch List will include general and specific items that will require completion or correction.

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2. Upon Completion of all Punch List items Contractor will notify Architect and request final review. More than 2 additional reviews required by Architect will be charged to the Contractor at a rate of \$150.00 per hour.
- E. Upon verification that all but minor punch list items have been completed, Architect will issue a Certificate of Substantial completion. This signifies the end of Liquidated Damages if they apply and signifies the start of the Warranty period.

3.04 Pre-Substantial Completion Tasks

- A. Cleaning
1. Execute cleaning prior to Substantial Completion. Refer to Section 01740
- B. Project Record Documents
1. Submit Project Record documents to the Architect for review and certifications. Refer to Section 01770 Closeout Submittals.
- C. Systems Demonstration
1. Refer to Technical Specifications
 2. Prior to Substantial Completion Inspection, demonstrate operation of each system to Architect and Owner.
 3. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using operation and maintenance data as basis of instruction.
 4. Arrange for each installer of equipment that requires operation and maintenance to provide instruction to Owner's personnel.
 5. Include a detailed review of the following:
 - (a) Startup and shutdown.
 - (b) Emergency operations and safety procedures.
 - (c) Noise and vibration adjustments.
 - (d) Maintenance manuals.
 - (e) Spare parts, tools, and materials.
 - (f) Lubricants and fuels.
 - (g) Identification systems.
 - (h) Control sequences.
 - (i) Hazards.
 - (j) Warranties and bonds.

3.05 Substantial Completion Review (Punch List)

- A. If the Architect determines that the Work is ready for Substantial Completion Review, the Substantial Completion Review shall be performed to identify all remaining items.
- B. Publication of Punch List for immediate correction.
- C. Request Substantial Completion Review once the following are complete:
1. Advise Owner of pending insurance changeover requirements.
 2. Submit Record Drawings and Specifications, maintenance manuals, warranties, and similar record information.
 3. Deliver spare parts, extra stock, and similar items.
 4. Changeover locks and transmit keys to Owner.
 5. Complete startup testing of systems and instruction of operation and maintenance personnel.
 6. Remove temporary facilities and controls.
 7. Complete final cleanup.
 8. Touch up, repair, and restore marred, exposed finishes.

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- 9. Obtain final inspections from authorities having jurisdiction.
 - 10. Obtain certificate of occupancy.
 - D. Upon receipt of a request for review, Architect will proceed with review (see NOR above) or advise Contractor of unfilled requirements.
 - E. Architect will conduct Substantial Completion Review (Punch List)
 - F. The purpose of the review will be to record all remaining deficiencies.
 - 1. There will be no negotiations at the Review. All disagreement regarding quality, completeness or scope will be in writing.
 - G. The Architect will prepare a written draft version of the Punch List for review by the Contractor and Owner.
 - 1. The Owner and Contractor may request amendment to the Punch List in writing.
 - 2. If amendments are approved by the Architect, the Architect will issue the final Punch List.
 - H. Upon receipt of the final Punch List, the Contractor shall submit a schedule for completion of the remaining items.

3.06 Substantial Completion

- A. Architect will prepare the Certificate of Substantial Completion after Final Review and acceptance.
 - 1. Miscellaneous items that remain to be completed or repaired will be attached as a list to the Certificate of Substantial Completion.
- B. If punch list is not adequately complete, Architect will advise Contractor of items that must be completed or corrected before the Certificate of Substantial Completion will be issued.

3.07 Preparation for Final Inspection

- A. Correction of Deficiencies
 - 1. The Contractor shall correct all remaining deficiencies and perform all remedial work according to the Punch List and the requirements of the Contract Documents.
- B. Final Cleaning
 - 1. Perform Final Cleaning. Refer Section 01740
- C. Conduct final cleaning of all installed or constructed components, all site areas. Include removal of all construction debris.
- D. Assemble remaining close out documents and deliver to Architect.
- E. All work shall be clean and ready for use upon completion.
- F. Damages And Restorations
 - 1. Damage to material and finishes caused by movement of equipment or other operations shall be restored or replaced as specified or directed by the Architect at no additional cost to the Owner.
 - 2. Restoration shall be equal to the original work, and finishes shall match the appearance of existing adjacent work.
- G. Remedial Work
 - 1. Any remedial work necessary due to faulty workmanship or materials will be replaced by the Contractor at no cost to the Owner. Work will be done at such time and in such manner so as not to cause any interruption or inconvenience to Owner's operations.

3.08 Final Inspection

- A. Request inspection for certification of final acceptance and final payment, once the following are complete:
 - 1. Submit final payment request with conditional waivers and supporting documentation. Include insurance certificates.
 - 2. Submit a copy of the List attached to the Certificate of Substantial Completion stating that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion.
 - 4. Submit consent of surety to final payment.
- B. Architect will re-review the Project upon receipt of notice that the Work has been completed.
 - 1. On completion of re-review, Architect will prepare a certificate of final payment. If the Work is incomplete, Architect will advise Contractor of the Work that is incomplete or obligations that have not yet been fulfilled.

3.09 Post Construction

- A. Maintenance Period
 - 1. Initiate maintenance periods that have not already been initiated.
 - 2. Contractor shall coordinate 11 month warranty walk for review and acceptance by District and Architect.
 - 3. Contractor shall make all corrections required based on warranty walk prior to and as a condition of release of Bonding obligations.

End of Section

Closeout Submittals

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1, 2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of ALL work of this Contract.

Item	Description
Closeout Submittals	<ul style="list-style-type: none"> • The following is a minimum list of Closeout Submittals and may not include all items listed in other specification sections. • Final Site Survey • Maintenance Contracts • Maintenance and Operation Data • Maintenance Materials • Product Bonds • Warranties • Project Record Documents (As-Built)
Preparation	<ul style="list-style-type: none"> • Binding, assembly and presentation of all submittals

- B. *Final payments will not be made to contractor until all Closeout Submittals have been provided and approved. Cession of construction tasks does not necessarily mean that the project is complete.*
- C. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.

Final Site Survey	• Bound in Project Binder
Maintenance Contracts	• Bound in Project Binder
Maint and Operations Data	• Bound in Project Binder
Maintenance	• Per Specification Section and actual Product / Systems

Materials	Maintenance and Operations Instructions
Product Bonds	<ul style="list-style-type: none"> • Bound in Project Binder •
Product Warranties	<ul style="list-style-type: none"> • Bound in Project Binder
Project Record Documents	<ul style="list-style-type: none"> • Hand or Digital Documents as specified below

Part 2. Requirements

2.01 Typical Submittal

- A. At Contract close-out submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- B. Provide Documents in fully bound, transportable form ready for use by Owner.
 - 1. Submit three sets of all required documents listed above prior to final inspection, bound in 8-1/2" x 11" three-ring binders with durable plastic covers.
 - 2. Arrange by Specification division and give names, addresses, and telephone numbers of subcontractors and suppliers.
- C. Binding shall be satisfactory to withstand extended use over the expected life of the project for which they were assembled.

2.02 Final Site Survey

- A. Not Required

2.03 Maintenance Contracts

- A. Provide any required maintenance contracts

2.04 Maintenance and Operations Data

- A. Provide Data for:
 - 1. Electrical equipment and controls
 - 2. Mechanical Equipment and controls
 - 3. Fire Alarm components
 - 4. Signal and communications components
 - 5. Contractor supplied machinery and equipment
 - 6. Contractor supplied accessories
- B. Provide Maintenance and Operations Instructions for all systems, assemblies, components and installations.
 - 1. List of equipment and parts lists
 - 2. Operating and maintenance instructions
 - 3. Shop drawings and product data
- C. Provide Emergency instructions.
- D. Provide Spare parts list.
- E. Provide Copies of warranties.
- F. Provide Wiring diagrams.

2.05 Material and Finish Data

- A. Provide data for primary materials and finishes, including:

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1. Trade names, model or type numbers
 2. Cleaning instructions
 3. Product data
 4. Safety and hazard data

2.06 Maintenance Materials

- A. Provide Surplus Materials
- B. Provide Spare Parts
- C. Provide Special Tools and Proprietary Equipment
- D. Provide Software and Documentation

2.07 Product Bonds

- A. Provide any Product Bonds specified elsewhere in this Specification.

2.08 Warranties

- A. Warranties shall be provided per the terms of the Contract for all labor and material provided or installed by the Contractor.
 1. Submittal: Provide duplicate copies, on Contractor and Manufacturer's letterhead.
 - (a) Assemble General Contractor Warranty, all subcontractor warranties and all product, equipment and system warranties.
 - (b) Assemble documents executed by subcontractors, installers, suppliers, and manufacturers.
 - (c) Provide table of contents
 - (d) Bind warranty information in 3-hole binders with durable plastic covers. Arrange in order of coverage, from general to specific.
 2. Submit final warranties prior to final application for payment.
- B. Statutory Warranty shall be documented by the Contractor and all Sub-Contractors in writing.
- C. Warranties shall provide the following minimum protections to the Owner:
 1. Protect Owner against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
 2. Provide for removal and replacement work which is damaged as result of failure, or which must be removed and replaced to provide access for correction of other warranted work.
 3. After correction, reinstatement of warranty for corrected work to date of original warranty expiration, but not less than half original warranty period.
 4. Replacement or restoration of failing warranted items without regard to anticipated useful service lives.
- D. Warranty Form shall not detract from or confuse interpretations of Contract Documents.
 1. Warranty shall be countersigned by manufacturer.
 2. Where specified, warranty shall be countersigned by subcontractor and installer.

2.09 Project Record Documents (As-Built)

- A. The Contractor shall provide a complete set of Record Drawings and Specifications that clearly show all differences between the contract work as drawn and as installed. This includes all work, concealed or unconcealed. All work added to the contract which is not shown on the Contract Drawings shall be included also. Incorporate all clarification sketches into record documents. The Record Specifications shall include all addenda.

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- B. Concealed Work shall be defined as work installed in the slab or in an area that cannot be readily inspected by use of access panels, inspection plates, or other removable features.
 - C. Prepare Final Record Drawings for submittal to the Architect.
 - 1. Refer Progress Documentation Section of Division 1.
 - D. Before a final payment is authorized, the Contractor shall certify that all changes in the work are included in the Record Drawings and Specifications.
 - E. Architectural consultants shall review all changes in the documents and provide the Owner with a complete set of reproducible drawings before final payment is authorized.

Part 3. Execution

- A. Not Used.

End of Section

General Demolition

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1,2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
General	<ul style="list-style-type: none"> • General Demolition Requirements
Special Coordination	<ul style="list-style-type: none"> • Refer to Related Sections for specific project requirements not included herein.

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.

Item	Description
Catalog Cuts	<ul style="list-style-type: none"> • n/a
Product Data	<ul style="list-style-type: none"> • n/a
Samples	<ul style="list-style-type: none"> • n/a
Shop Drawings	<ul style="list-style-type: none"> • n/a
Schedule	<ul style="list-style-type: none"> • Include Schedule entry on Gantt Chart for General Demolition

1.04 References/Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References	<ul style="list-style-type: none"> • n/a
Standard	<ul style="list-style-type: none"> • n/a

1.05 Quality Assurance

A. Provide the following per Division 1

Item	Description
Supervision	<ul style="list-style-type: none">• Full time supervision and observation by the Contractor of all on-site Construction Activities.• Ensure that all items to be retained in good condition and turned over to owner are properly protected.
Qualifications of Workers	<ul style="list-style-type: none">• General Contractor shall ensure that all workers providing labor on this project are fully competent and experienced in the area of work being performed. General Contractor shall require subcontractors to remove any unqualified workers from the project.
Product Acceptance	<ul style="list-style-type: none">• n/a
Substrate Acceptance	<ul style="list-style-type: none">• General Contractor (Superintendent) shall verify all substrates / conditions prior to allowing installation of any item.

1.06 Quality Control by Contractor

A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract Documents.

Item	Description
Supervision	<ul style="list-style-type: none">• Per Division 1
Testing	<ul style="list-style-type: none">• n/a
Special Inspections	<ul style="list-style-type: none">• n/a
Mock Ups	<ul style="list-style-type: none">• n/a

1.07 Quality Control by Owner

A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract.

Item	Description
Observation	<ul style="list-style-type: none">• Per Division 1.
Inspection	<ul style="list-style-type: none">• Per CCR Title 24: Continuous Inspection by DSA Certified inspector
Testing	<ul style="list-style-type: none">• Refer to DSA Testing and Inspection Sheet
Special Inspections	<ul style="list-style-type: none">• Refer to DSA Testing and Inspection Sheet

1.08 Closeout

A. Provide the following Close Out materials in accordance with Division 1.

Item	Description
Product Manuals	<ul style="list-style-type: none">• n/a
System Manuals	<ul style="list-style-type: none">• n/a
Maint. Tools/Materials	<ul style="list-style-type: none">• n/a
Surplus Materials	<ul style="list-style-type: none">• n/a
Training	<ul style="list-style-type: none">• n/a

1.09 Warranty

- A. Provide written warranty in accordance with Division 1.

Item	Description
Warranty Form	<ul style="list-style-type: none">• Per Division 1
Warranty Period	<ul style="list-style-type: none">• 1 year
Warranty Start	<ul style="list-style-type: none">• Date of Substantial Completion

Part 2. Products

2.01 Not Used

Part 3. Execution

3.01 Demolition Section of Other Disciplines

- A. This section shall apply to all demolition work defined under any other section of this Specification. Conflicts between this section and other sections shall be resolved by the Architect with favor to the most restrictive stipulation.
- B. All trades shall review all documents to determine the extent to which their demolition work may require support work from other trades.
- C. The Contractor shall be responsible to ensure that all trade work required for demolition tasks is provided regardless of the inclusion of that trade in any Plans or Demolition Sections.
1. Contractor shall provide complete service including specified demolition work as well as collateral requirements for repair, closure, termination or re-routing. No claims shall be made for incidental or peripheral demolition work associated with any specified work.

3.02 Transfer of Responsibility and Disposition of Materials

- A. Contractor shall consult with Owner prior to commencing any demolition and determine which existing items and equipment are of value to the Owner. These items shall be carefully removed to avoid damage and shall be delivered to the Owner as directed.
- B. Title to all remaining items, equipment and fixtures required to be removed, shall be vested in the Contractor whereupon the Owner will not be responsible for the condition, loss or damage to said property. All such items shall be removed from the Owner's property.

3.03 Supervision Requirements

- A. Provide continuous supervision of all demolition activities. All demolition work shall be done in conjunction with the Contract Documents and shall accommodate provisions of all aspects of the Documents.
- B. Conduct demolition to minimize interference with adjacent structures.
- C. Conduct operations with minimum interference to public or private accesses.
- D. Maintain egress and access at all times. Do not close or obstruct roadways without permits.
- E. Cease operations immediately if adjacent structures appear to be in danger. Notify Architect.

3.04 Site Safety During Demolition Operations

- A. Contractor shall provide fire watch for the site or facility during temporary shutdown of fire alarm or fire suppression systems.
- B. Contractor shall provide security services for the site or facility during temporary shutdown of the security systems.
- C. Contractor shall provide traffic control during disruption of normal traffic flow on site due to temporary alterations in site circulation system.
- D. Contractor shall provide pedestrian control during demolition operations to ensure pedestrians are protected from equipment and materials.
- E. Contractor shall provide vision shielding to prevent observation by the public of cutting and welding torches or any other source of bright light that may damage vision.
- F. Refer to Site Safety Section of this specification.

3.05 Demolition Scheduling

- A. Contractor acknowledges that Demolition Scheduling shall be coordinated with the Architect for the beneficial operation of the School Site. Contractor shall place no limitation on the extent of coordination of Demolition activities for this purpose.
- B. Contractor acknowledges that Demolition work may occur in multiple and repetitive tasks and may occur at different locations at different times, dependent on the needs of the School Site to maintain access, operation, utilities, systems and safety.
 - 1. Demolition tasks may be restricted to certain work times based on any one of the following:
 - (a) Occupancy of adjacent areas by District and the need to minimize disruption at particular times.
 - (b) Need to maintain operation of critical systems and utilities at particular times
 - 2. Demolition tasks may be restricted to certain work areas based on the nature and scope of the task and its potential affect on the users of adjacent occupied spaces.
- C. All Demolition Scheduling shall be reviewed with the Architect prior to commencing operations.
 - 1. Demolition of any items that could affect daily operations of the school shall be scheduled with the District to occur and be replaced with new construction when school is not in session.
 - 2. Demolition Operations may be limited to hours before and after school sessions depending on the time of year and the nature of the demolition work.
 - 3. Demolition Operations may be limited to periods in which school is not in session, such as weekends and holidays.
- D. Contractor shall provide allowance for multiple demolition exercises as may be required to facilitate school schedule. Coordination of demolition scheduling with District operational needs shall not be allowed as the basis of delay claims.

3.06 Notification of Demolition

- A. Provide notification of the commencement of any demolition task or phase 48 hours in advance.
- B. Do not commence demolition until the Architect has approved the task or phase and coordinated the schedule with the District.

3.07 Demolition Equipment

- A. Contractor shall provide all equipment and materials as may be necessary to perform the demolition work within the limitations of this section. No claims shall be made for special equipment or processes based on limitations of this section.
- B. Contractor shall provide equipment and tools of appropriate size, operation and function to accomplish demolition tasks within the restrictions described herein.
 - 1. Provide equipment of appropriate size to ensure the protection of existing facilities, materials and systems.

3.08 Preparation

- A. Provide, erect, and maintain temporary barriers and security devices. Include chain link fence around each phase of construction
 - 1. Include protection of all existing trees.
- B. Mark all items to be removed.
- C. Provide layout as required to direct slab and wall removal. Identify slab and walls requiring precise cutting and demolition for future fitting of new construction.

3.09 Dust Control

- A. All demolition activities shall include adequate measures for dust control. Contractor shall provide any and all means necessary to prevent the circulation of dust into adjacent buildings and site areas.
- B. Contractor shall provide the following as needed or at the request of the Architect:
 - 1. Watering shall occur over transit areas including equipment routes, equipment loads and parking areas.
 - 2. Opening protection at all areas that may include plastic barriers, fans and other means to prevent dust from spreading throughout building.
 - 3. Dust removal: Sweep or wash down of adjacent site and building areas that will be used by the public.
- C. Use all means necessary to prevent the spread of dust during performance of the work of this Section; provide dust curtains of fireproof polyethylene where indicated and where applicable, moisten surfaces as required.
- D. Provide sealed membranes with zipper operated doors over corridors and passage ways separating the work zone from occupied spaces. Provide sealed membranes over windows and ventilation openings.
 - 1. Membranes shall not limit operability of windows and ventilation systems in areas occupied by the public.
 - 2. In no case shall barriers obstruct required exit routes.

3.10 Demolition

- A. Demolish and remove components in an orderly and careful manner, in sequence as indicated on Drawings or as determined by consultation with Architect.
- B. Coordinate all structural shoring and demolition to insure that no settling, deflection or other failure occurs as a result of removal or modification of existing elements.
- C. Protect existing supporting structural members.
- D. Clearly direct demolition work so that items to remain are protected.
- E. Disconnect, cap and identify designated utilities.

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1. Cap utilities at appropriate locations for future service, reconnection.
 2. Architect may require removal of piping and raceway beyond specific work areas in order to achieve appropriate location for utility termination.
- F. Execute demolition work to ensure safety of persons and adjacent property against damage by falling debris or other causes in connection of this work.

3.11 Termination of Utilities

- A. All demolition of utility piping, wiring or ductwork shall include functional termination of piping, wiring and ductwork to remain such that:
1. Operation of remaining systems is not affected or disrupted.
 2. Terminations can be accessed for reconnection or re-routing either as part of this work or as specified in other projects.
- B. Demolition of site and building utilities shall provide for termination and investigation regarding the operation of remaining components in adjacent buildings. Contractor shall explicitly ensure that removal of any component specified herein does not prevent remaining components from operating in occupied spaces.

3.12 Re-Installation / Reconstruction

- A. Demolition work may require the temporary removal of material, assemblies and equipment that is intended to remain. Demolition work shall require the re-installation of such items to their original condition
1. Reinstallation may affect utility systems and components, electrical systems , communications and data systems and alarm systems.
 2. All critical systems shall be maintained in working order for the remainder of the site. No demolition work shall be allowed that will disable and system beyond the extent of a temporary shutdown.
 3. Contractor is responsible for returning any system to operation for adjacent areas where work of this contract has interrupted that operation.

3.13 Repair and Replacement of Damaged Assemblies, Utilities Systems

- A. Promptly repair damages caused to adjacent facilities by demolition operations, as directed by the Architect and at no cost to the District.
- B. Contractor is responsible for repair, replacement of any system or component damaged by demolition work.

3.14 Surface Restoration of Materials to Remain

- A. Where surfaces are to remain unfinished, as indicated on the drawings, Contractor shall restore such surfaces to be free of paint, plaster, fasteners, and holes.
1. Contractor shall power-wash and/or sand/bead-blast all masonry and concrete surfaces indicated as to remain unfinished.
 2. Contractor shall extract all fasteners, including powder-driven fasteners, expansion anchors, and lead anchors, and patch resulting holes to match adjacent surface. Alternatively, fasteners may be cut off at least 1/2" below surface of remaining material, and patched to match adjacent surface.
- B. Unfinished surfaces which are to remain visible when construction is complete shall be restored uniformly, regardless of whether the damage or marks were pre-existing or caused by demolition work.
- C. Surfaces receiving new finishes shall be prepared per Specifications and manufacturer's instructions for the specified finishes.

3.15 Disposal of Debris

- A. Remove from the site and legally dispose of all debris resulting from demolition operations.
- B. Provide certification that all materials have been disposed of at appropriate facilities via appropriate methods.
 - 1. Provide dump receipts describing yardage and material content.
 - 2. Provide certification for all hazardous materials.

3.16 Recycling

- A. Prepare a recycling plan describing the types and estimated quantities of materials to be removed that can be recycled.
- B. Dispose of all recyclable materials at appropriate disposal facilities as required by local regulatory agencies.
- C. Provide receipts from all facilities at which material was deposited for recycling purposes.

3.17 Cleaning

- A. Remove demolished materials from site as work progresses.
 - 1. Provide debris box or trucking as appropriate to task.
 - 2. Remove debris boxes upon filling to capacity.
 - 3. Remove partially filled boxes within one week of delivery.
 - 4. Prevent access to debris boxes by the public.
- B. Leave areas of work in clean condition.
 - 1. Provide sweeping, vacuuming, mopping and other janitorial services as required.

End of Section

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Rough Carpentry

Part 1. GENERAL

1.01 Summary

- A. This section specifies rough carpentry, including all framing, and sheathing.
- B. 1. All damaged or dry rot wood to be replaced 'like in kind'.

1.02 Related Sections

- A. Section 07000 - Scope of Work Milestones
- B. Section 07015 - Preparation for roof replacement
- C. Section 07221 – Roof Insulation
- D. Section 075550 – Modified Bitumen Roofing (KEE)
- E. Section 07610 – Sheet metal flashing and trim

1.03 Quality Assurance

- A. Furnish materials complying with the following:
 - 1. Softwood Lumber.
 - a. Graded in accordance with the latest edition of "Standard Grading Rules No. 17," WCLIB, or "Western Grading Rules," WWP. Lumber grades specified below are taken from "Standard Grading Rules, No. 17." Equal grades from "Western Grading Rules" are acceptable. Furnish lumber bearing a recognized grading bureau mark or a "Certificate of Grade" may be substituted. Where a grade for Douglas Fir (DF) species is indicated, other species, if approved by the COR, may be supplied on an equal stress grade basis.
 - 2. Pressure Treatment.
 - a. Waterborne, conforming to AWP C2, AWP P5.
 - 3. Plywood.
 - a. Graded in accordance with APA PS 1-95. Furnish panels identifiable by a grade trademark of a recognized grading association. Index numbers listed (i.e. 24/0) may be larger but not smaller than shown.
 - 4. All materials and construction techniques shall meet applicable Local codes or the requirements herein, whichever is stricter.

Part 2. Products

2.01 Materials

- A. Lumber.

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1. Furnish S4S lumber, unless otherwise shown on drawings. Furnish lumber with a moisture content of 19 percent or less for material 3 inches and less in nominal thickness, unless otherwise specified.
 - B. 15 lb. felt.
 1. Install under pressure treated wood in contact with concrete.
 - C. Framing Members.
 1. Beams.
 - a. 4 inches and less in width: No.2, DF, S-dry.
 - b. 5 inches and wider: No. 1 DF.
 2. Joists and Stair Stringers.
 - a. No. 2, DF, S-dry.
 3. Rafters.
 - a. No. 2, DF, S-dry.
 4. Studs & Plates (2 x 4 and smaller): Stud or standard grade, DF, Larch, Hemlock, S-dry.
 5. Headers.
 - a. No. 2, DF, Larch, Hemlock, S-dry.
 - b. Studs and Plates (2 x 6 and larger): No. 2, DF, Larch, Hemlock, S-dry.
 - c. Blocking.

Standard grade, DF, Larch, Hemlock, S-dry.
 6. Columns.
 - a. No. 1, DF.
 - D. Subfloor.
 1. 1/2 inch CDX plywood 32/16.
 2. 2 x 6 T&G decking, Commercial Dex., DF, S-dry.
 - E. Exterior Sheathing.
 1. Roof Sheathing.
 - a. (Concealed Surfaces) 5/8 inch CDX ext. plywood, 24/0; (Exposed surface) 1/2 inch C-C ext., plywood 24/0.
 - b. (Concealed Surfaces) 3/4 inch C-C ext. plywood, 30/12; (exposed surfaces and soffits) 1 x 6, T&G, "B" finish, KD, WRC.
 - c. 2 x 6, T&G, decking, Commercial Dex., DF, S-dry.
 2. Wall Sheathing.
 - a. 1/2 inch CDX, plywood 24/0.

Part 3. EXECUTION

3.01 Construction

- A. Framing.
 1. Make joints in beam and girders over supports unless shown otherwise on the drawings.

2. Nail built-up girders from both sides with 16d nails at 30 inches on center staggered in 2 rows. Provide 2 nails at each end of each piece and each splice.
3. Set sills level and anchored on the foundation. Set in a full bed of Portland cement mortar, if necessary to obtain full bearing. Provide flat washers on all anchor bolts.
4. Set joist with crown side up. Install solid blocking over supports. Provide a minimum of 1-1/2 inch bearing for each joist. Nail with two 16d nails at each bearing. Double joists under parallel partitions and at all openings.
5. Toenail rim joists to sill with 8d nails 16 on center.
6. Lap joists over girders 4 inches minimum. Nail with three 16d nails from each side.
7. Notching of joist will be allowed in the end 1/3 of the span only. Limit notching to 1/6 of the joist depth.
8. Set rafters with crown edge up. Cut birds-mouths to provide full bearing. Nail rafters to top plate with two 8d nails and to ceiling joists with three 16d or five 10d nails.
9. Fabricate trusses as shown on the drawings. Nail to top plate with four 10d nails. Install framing anchors where shown on the drawings.
10. Provide continuous length studs. Nail studs to top plate with four 8d toenails or two 16d end nails.
11. Install full length cripples at all openings. Nail cripples to studs with 16d nails at 24 inch on center. Toenail cripple to header with two 8d nails.
12. Provide headers, over opening, of a size indicated below:

Maximum 3'-6"	span 2-2x6's
Maximum 5'-0"	span 2-2x8's
Maximum 6'-6"	span 2-2x10's
Maximum 8'-0"	span 2-2x12's
Maximum 8'-0"	span 2-2x12's

13. Space header material with plywood or surfaced lumber to equal the stud depth.
14. End nail studs to header with three 16d nails.
15. Do not splice columns. Cut ends square to provide full bearing. Nail columns top and bottom with four 16d toenails, or as shown on drawings.

B. Subfloor.

1. Lay plywood subfloor with face grain at right angles to supports.
2. Space panel ends and edges 1/32 inch. Stagger end joints. Nail with 8d nails 6 inch on center at edges, and 10 inch on center intermediate supports.
3. Install 2 inch T&G subfloor at right angles to the supports. Make joints over supports, unless end matched. Stagger end joints a minimum of 1 span. Nail with two 16d nails at each support, 1 blind nail and 1 face nail.

C. Exterior Sheathing.

1. Install roof sheathing at right angles to supports. Stagger end joints a minimum of 1 span. Nail with two 8d nails at each support.

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2. Apply plywood roof sheathing with the face grain at right angles to supports. Stagger end joints. Nail with 8d nails 6 inch on center at edges and 12 inch on center at intermediate supports.
 3. Apply 1x6 inch T&G roof sheathing at right angles to supports. Make all joints over supports. Stagger end joints. Nail with two 8d nails at each support.
 4. Install 2 inch T&G roof sheathing at right angles to supports. Make joints over supports, unless end matched. Stagger end joints a minimum of 1 span. Nail with two 16d nails at each support, 1 blind nail and 1 face nail.
 5. Apply plywood wall sheathing with the face grain vertical. Nail with 6d nails at 6 inch on center at edge and 12 inch on center at intermediate supports.
- D. E. Treated Wood.
1. Field treat cuts and holes in pressure treated members with copper naphthenate.
- E. F. Exposed Hardware.
1. Provide rough hardware for the proper installation of work. Install hot-dipped galvanized hardware, nails, bolts, etc. at locations exposed to the weather.

End of Section

Preparation for Roof Repair

Part 1. General

1.01 Related Documents

- A. Removal of existing built up roofing system in preparation for new KEE Stone FB system.
- B. Salvaging, and protect existing HVAC Equipment, Exhaust and Intake Hoods.

1.02 Related Requirements

- A. Section 065100 - Rough Carpentry.
- B. Section 075550 - Modified Bitumen Roofing.
- C. Section 07610 Sheet Metal flashing and trim

1.03 PROJECT CONDITIONS

- A. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.
- B. Schedule work to coincide with commencement of installation of new roofing system.
- C. Remove only existing roofing materials that can be replaced with new materials the same day.
- D. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.
- E. Do not disable or disrupt building fire or life safety systems without 10 (ten) days' prior written notice to Owner.
- F. Do not close or obstruct egress from any building exit or site exit.
- G. Conduct roof removal to minimize interference with adjacent and occupied building areas.
- H. Use all means necessary to protect existing objects, construction and plantings designated to remain. In the event of damage, make all repairs and replacements necessary for approval of Owner at no additional cost to the Owner.
- I. Protective measures: Provide all necessary safeguards, including warning signs and lights, barricades, and the like, for protection of the public, Contractor's employees and existing improvements during demolition. Prevent access of unauthorized persons to area of work.
- J. Provide at least one person who shall be present at all times during execution of this portion of the work, be thoroughly familiar with the type of work being performed and the best methods for its execution and who shall direct all work performed under this Section.
- K. Control the use of water to prevent damage to the existing facilities to remain. Provide wet vacuum equipment where water, such as waste cooling water from concrete sawing or water used as dust emollient, is used adjacent to and in existing buildings.
- L. Cease operations immediately if structure appears to be in danger and notify Owner's rep. Do not resume operations until directed.

1.04 SCHEDULING

- A. Schedule work under the provisions of Section 013100.
- B. Schedule work to coincide with Solar and HVAC roof work.

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- C. Coordinate preparation for roofing with other trades to assure the proper sequence, limits, methods and time of performance. Schedule work so as to impose a minimum of hardship on the present operation of facilities and the performance of the work of other trades or contracts.
 - D. Describe removal procedures and schedule.

1.05 FIELD CONDITIONS

- A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection prior to and during installation of new roofing system.

PART 2 PRODUCTS

2.01 MATERIALS

Temporary Protection: Sheet polyethylene; provide weights and temporary fasteners to retain sheeting in position.

PART 3. EXECUTION

3.01 EXAMINATION

Verify that existing roof surface is clear and ready for work of this section.

3.02 PREPARATION

- A. Provide, erect, and maintain temporary barriers at locations required to prevent unauthorized access to area of work.
- B. Inspect the area of work and verify locations of all items designated to be removed or preserved.
- C. Do not begin work until temporary barricades, warning signs and other forms of protection are installed.
- D. Erect and maintain weatherproof closures for exterior openings.
- E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued occupancy of adjacent buildings.
- F. Protect existing equipment, materials and features that are not to be demolished or removed for re-installation.
- G. Prevent movement of structure; provide bracing and shoring.
Be responsible for the adequacy and design of all temporary shoring and bracing systems.
- H. Notify affected utility companies before starting work and comply with their requirements.
 - 1. Mark location and termination of utilities.
 - 2. Provide appropriate temporary signage including signage for exit or building egress.
- I. Sweep roof surface clean of loose matter.
- J. Remove loose refuse and dispose of offsite.

3.03 MATERIAL REMOVAL

- A. Disconnect, cap, and identify designated utilities within removal areas.

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- B. Remove metal flashings as required.
 - C. Remove roofing membrane, shingles, perimeter base flashings, flashings around roof protrusions, pitch pans and pockets as required.
 - D. Repair existing wood deck surface to provide smooth working surface for new roof system.
 - E. Work not mentioned to be removed that interferes with new construction shall be cut to clean cut lines to provide for proper interface with new construction, or patching and repair, as required for scope of work indicated.

3.04 PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with temporary fasteners.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surface.

3.05 SALVAGE

- A. Items indicated to be re-installed shall be removed carefully, cleaned and stored in a protected location on or off the site until re-installed.

3.06 PATCHING

- A. Patch materials to remain when damaged by this work. Finish materials and appearance of the patch or repair work shall match the existing contiguous materials and finishes in all respects and shall be approved by Owner.
- B. Where materials are removed oversize or in improper location, replace the excess removed material as instructed by Owner at no additional cost to the Owner.

3.07 RE-INSTALLATION

- A. Re-Install removed items as indicated on roof plans or details. Securely attach, provide watertight, weatherproof installation.

3.08 CLEAN-UP AND DISPOSAL

- A. Debris, waste, and removed materials, other than items to be salvaged, are Contractor's property for legal disposal off the site, as required by applicable Federal and State regulations. Continuously clean up and remove these items. Do not allow removed items to accumulate.
- B. Leave the site in a neat and orderly condition prepared for the work of other trades.

END OF SECTION

Roof Insulation

PART 1. GENERAL

1.01 SECTION INCLUDES

- A. Roof insulation and installation.
 - 1. Mechanically Attach ¼", or ½" Gypsum as specified.
 - 2. Install ¼" sloped ridged taper insulation as indicated on ROOF PLAN.

1.02 RELATED SECTIONS

- A. Section 06 5100 - Rough Carpentry.
- B. Section 07 5500 – Modified Bitumen Roofing (KEE)

1.04 SUBMITTALS

- A. Product Data: Manufacturer's specifications and installation instructions for each product specified.
- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
- C. Provide a sample of each insulation type.
- D. Drawings:
 - 1. Indicate complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
 - 2. Include: Outline of roof, location of drains and scuppers, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.
- E. Certifications: Submit all of the following:
 - 1. Roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
 - 2. Roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.
 - 3. Certification that insulation and fastening system furnished is Tested and Approved by Factory Mutual for 1-90 Wind Up-Lift Requirements.

1.05 DESIGN REQUIREMENTS

- A. No ponding of water on roof, all runoff flows to drain.
- B. All roof insulation overlaid with gypsum board. No roofing installed over exposed insulation.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened packaging, with identifying tags or labels intact and legible.

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- B. Coordinate scheduling for timely deliveries and prompt installation of materials.
 - C. Store insulation and support system in a dry, protected area out of direct sunlight. If storage area is outdoors, store material off the ground and protected by a suitable waterproof cover.
 - D. Remove insulation which is warped, broken or exposed from moisture from the site.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Handle and install insulation system only under conditions and temperatures recommended by the manufacturer.
- B. Coordinate insulation placement to assure that material can be covered promptly with roof. Do not leave insulation exposed overnight or to inclement weather.

1.08 WARRANTY

- A. Provide warranty coordinated with the requirements of other sections specifying roof products.

PART 2. PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Manufacturers:
 - 1. Manville Roofing Systems, www.jm.com
 - 2. Hunter, www.hpanels.com
 - 3. GAF, www.gaf.com.
 - 4. Or approved equal

2.02 MATERIALS

- A. Polyisocyanurate Roof Insulation: Provide thicknesses of insulation as indicated, or as required to provide minimum slopes indicated or required. Provide combination of types and thicknesses to provide a complete system.
 - 1. Surface Burning Characteristics: Provide assembly with composite flame spread rating of 25 or less and smoke developed of 50 or less, as determined in accordance with ASTM E 84.
 - 2. Factory tapered, closed cell polyisocyanurate foam core, where indicated on ROOF PLAN.
 - 3. Board insulation, closed cell polyisocyanurate foam core.
 - a. Minimum thickness as indicated on ROOF PLAN.
 - b. R-Value per inch: 5.
 - 4. Insulation board shall meet the following requirements:
 - a. UL, WH or FM listed under Roofing Systems
 - b. Federal Specification HH-I-1972: Class 1
 - c. Dimensional Stability ASTM D2126: 2% max.
 - d. Compressive Strength ASTM D1621: Grade 3, min. 25 psi.
 - e. Vapor Permeability ASTM E-96: 1 perm max.
 - f. Foam Core Density ASTM D1622: 2.0 pcf min.
 - g. Water Absorption ASTM C209: <1 %
 - h. Flame Spread ASTM E 84: 25 max.
 - i. R-Factor HR per inch thickness ASTM C 518: (Design Value)
- B. Related Materials:
 - 1. Fiber Cant, crickets and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated or as required to achieve configurations shown, of perlite or organic fiberboard.

2. Asphalt: Type III, ASTM D-312.

C. Cover Board:

1. Gypsum board ½" thickness.

Georgia-Pacific, Dens Deck Prime or approved equal.

D. Fasteners:

1. Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
2. Factory Mutual Tested and Approved with 3 in. coated disc for 1-90 rating, length required to penetrate deck one inch.

PART 3. EXECUTION

3.01 EXAMINATION

A. Verify that roof framing system is complete and ready to receive insulation system. Do not proceed with installation until unsatisfactory conditions have been corrected.

1. Verify that work which penetrates roof deck has been completed.
2. Verify that wood nailers are properly and securely installed.
3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
4. Do not proceed until defects are corrected.
5. Do not apply insulation until substrate is sufficiently dry, 12 percent moisture maximum, and ready to receive insulation and adhesive.
6. Broom clean substrate immediately prior to application.
7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.

3.02 DECK PREPARATION

A. Verify flatness and tightness of joints of decking.

B. Confirm dry deck by moisture meter with 12 percent moisture maximum.

C. Place insulation boards in a method to maximize contact bedding. Notch out undersides of boards which directly cover structural fasteners or strapping which are attached to the roof deck. Make notch equal to the length, width and depth of structural strap or fastener. Install boards to prevent "bubbles", high spots or dams across direction of required drainage flow.

3.03 INSTALLATION

A. General: Install roof insulation in strict accordance with manufacturer's instructions and approved shop drawings.

1. Place boards in a method to maximize contact bedding. Notch out undersides of insulation where insulation directly covers structural fasteners which are attached to the roof deck. Make notch equal to the length, width and depth of steel strap.
2. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.
3. All joints shall be staggered and offset a minimum of 6" from the previous layer.
4. Install no more than 2" of thermal insulation as a single layer. Mechanically attach all thermal insulation on metal and wood decks. Fasteners shall only penetrate the top flute of structural deck or through wood decking. Fasteners shall not penetrate top flute of structural deck more than 1".

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5. All subsequent layer shall be installed with foam insulation adhesive.

3.04 CLEANING AND PROTECTION

- A. Remove debris and cartons from roof deck. Protect finished work to ensure that insulation remains clean and dry, ready to receive roofing membrane.

End of Section

Modified Bituminous Membrane Roofing

Part 1. General

1.01 Section Includes

- A. Applied 2-Ply Thermoplastic Roof System (KEE-Stone FB 60).

1.02 Related Sections

- A. Section 01 64 00 – Owner Furnished Products
- B. Section 06 51 00 - Rough Carpentry.
- C. Section 07 00 00 – Scope of Work Summary & Milestones
- D. Section 07 22 10 – Insulation Board: Insulation and fastening.
- E. Section 07 61 00 – Sheet Metal Flashing and Trim: Weather Protection for base flashings.

1.03 References

- A. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- B. ASTM D 1227 Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.
- C. ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.
- D. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- E. Warnock Hersey (WH): Fire Hazard Classifications.
- F. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- G. UL - Fire Resistance Directory.
- H. California Title 24 Energy Efficient Standards.

1.04 Design / Performance Requirements

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1. Warnock Hersey Class A Rating.
- C. Design Requirements:
 - 1. Uniform Wind Uplift Load Capacity
 - (a) Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - (i) Design Code: ASCE 7, Method 2 for Components and Cladding.
 - (ii) Importance Category: III
 - (iii) Importance Factor of: 1.0
 - (iv) Wind Speed: 120 mph

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- (v) Ultimate Pullout Value: 531 pounds per each of the fastener
 - (vi) Exposure Category: C
 - (vii) *Design Roof Height: 15 feet*
 - (viii) Minimum Building Width: 65 feet.
 - (ix) Roof Pitch: 1" : 12", 0.25":12".
 - (x) Roof Area Design Uplift Pressure:

- Zone 1 - Field of roof 16 psf
- Zone 2 - Eaves, ridges, hips and rakes 28.7 psf
- Zone 3 - Corners 44.7 psf

- 2. Live Load: 20 psf, or not to exceed original building design.
- 3. Dead Load:

- (a) Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.

- D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S Federal Government's Energy Star program.
- E. LEED: Roof system shall meet the reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island-Roof.
- F. Roof system shall have been tested in compliance with the following codes and test requirements:
 - 1. Warnock Hersey

- (a) ITS Directory of Listed Products

1.05 Submittals

- A. Submit under provisions of Section 013000.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions.
- C. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins. Report shall be signed and sealed by a Professional Engineer registered in the State of the Project who has provided roof system attachment analysis for not less than 5 consecutive years.
- D. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- E. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.06 Quality Assurance

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

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- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
 - C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
 - D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
 - E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
 - F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.07 Pre-Installation Meetings

- A. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
 - 1. Record minutes of the conference and provide copies to all parties present.
 - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
 - 3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.08 Delivery, Storage, and Handling

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 40 degree F (4 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.09 Coordination

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.10 Project Conditions

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

1.11 Warranty

- A. Upon completion of the work, provide the Manufacturer's written and signed NDL Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.

1. Warranty Period:

- (a) 20 + 10 years from date of acceptance. Requires mid period inspection.

Part 2. Products

2.01 Manufacturers

- A. Acceptable manufacturer: Santa Cruz City School District Standard: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105.

Local Representative: Adam Faville (408) 332-2504, afaville@garlandind.com.

Web Site: www.garlandco.com.

- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.

1. Bidder will not be allowed to change materials after the bid opening date.
See substitution procedures.
2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/Owner for approval prior to acceptance.
3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
 - (a) Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
 - (b) Will provide the same guarantee for substitution as for the product and method specified.
 - (c) Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 - (d) Will waive all claims for additional cost related to substitution, which consequently become apparent.
 - (e) Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
 - (f) Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.

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4. Architect/ Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
 5. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.

2.02 Cold Applied 2-Ply Thermoplastic Roof System- KEE-Stone FB 60

- A. Nail Base (Ply) Sheet: One ply to be tack nailed to roofing substrate:
 1. HPR Glasbase:
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 1. StressBase 120
- C. Thermoplastic Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 1. KEE-Stone FB 60:
- D. Interply Adhesive: (2)
 1. GreenLock Membrane(base ply), KEE-Lock Foam(cap ply)
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Flashing Ply Adhesive:
 1. Streebase 80:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Flashing Ply Adhesive:
 1. KEE-Stone FB 60 Flashing
- G. Flashing Ply Adhesive (2)
 1. Greenlock Flashing Adhesive(base ply), KEE-Lock Foam(cap ply)

Part 3. Execution

3.01 Examination

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 Preparation

- A. General: Clean surfaces thoroughly prior to installation.
 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.

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3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.03 Installation - General

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.04 Installation Cold Applied Roof System

- A. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
 1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.

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4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 6. Install base flashing ply to all perimeter and projection details.
 7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Thermoplastic Cap Ply: Allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
1. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
 2. All field seams must be clean and dry prior to initiating any field welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
 3. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
 4. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
 5. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
 6. Follow local code requirements for electric supply, grounding and surge protection. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
 7. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06 11 40.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07 62 00 or Section 07 71 00. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

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- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
 5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
 6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
 6. All stripping shall be installed prior to flashing cap sheet installation.
 7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.05 Cleaning

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.06 Protection

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.07 Field Quality Control

- A. Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 30 percent, 60 percent and 90 percent completion. Provide a final inspection upon completion of the Work.
 - 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 - 2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 - 3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.08 Schedules

- A. Nail (Ply) Sheet:
 - 1. HPR Glasbase:
- B. Base (Ply) Sheet:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - (a) Tensile Strength, ASTM D 5147
 - (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - (ii) 50mm/min. @ 23 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - (b) Tear Strength, ASTM D 5147
 - (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - (ii) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - (c) Elongation at Maximum Tensile, ASTM D 5147

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- (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4 % XD 4 %
 - (ii) 50mm/min @ 23 +/- 2 deg. C MD 4 % XD 4 %
 - (d) Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)
 - C. Thermoplastic/Modified Cap (Ply) Sheet:
 - 1. KEE-Stone FB 60: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim. ASTM D6754
 - (a) Breaking Strength, ASTM D 751, Proc. B, strip
 - (i) 375 lbf. (1,668 N)
 - (b) Tear Strength ASTM D 751
 - (i) 120 lbf. min. (534 N)
 - (c) Elongation at Break (%), ASTM D 751, Proc. B, Strip
 - (i) 40.0%
 - D. Base Sheet Interply Adhesive:
 - 1. Green-Lock Membrane Adhesive: Cold applied solvent free membrane adhesive: zero V.O.C. compliant performance requirements:
 - (a) Non-Volatile Content ASTM D 4586 100%
 - (b) Density ASTM D 1475 11.4 lbs./gal. (1.36 g/m3)
 - (c) Viscosity Brookfield 20,000-50,000 cPs.
 - (d) Flash Point ASTM D 93 400 deg. F min. (232 deg. C)
 - (e) Slope: up to 3:12
 - E. KEE Cap Sheet Interply Adhesive:
 - 1. KEE-Lock Foam: Dual component, single bead (ribbon applied) urethane insulation/membrane adhesive.
 - (a) Tensile Strength (ASTM D 412) 250 psi
 - (b) Density (ASTM D 1875) 8.5 lbs./gal.
 - (c) Viscosity (ASTM D 2556) 22,000 - 60,000 cP
 - (d) Peel Strength (ASTM D 903) 17 lb./in.
 - (e) Flexibility (ASTM D 816) Pass @ -70deg. F (-56.7deg. C)
 - F. Flashing Base Ply:
 - 1. VersiPly 40: 40 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual fiberglass reinforced scrim.
 - (a) Tensile Strength, ASTM D 5147
 - (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 215 lbf/in XD 215 lbf/in
 - (ii) 50 mm/min. @ 23 +/- 2 deg. C MD 37.5 kN/m XD 37.5 kN/m
 - (b) Tear Strength, ASTM D 5147
 - (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 275 lbf XD 275 lbf
 - (ii) 50 mm/min. @ 23 +/- 2 deg. C MD 1223 N XD 1223 N
 - (c) Elongation at Maximum Tensile, ASTM D 5147
 - (i) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - (ii) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - (d) Low Temperature Flexibility, ASTM D 5147

(i) *Passes -30 deg. F (-34 deg. C). Meets or Exceeds ASTM D 4601 Type II Performance Criteria.*

G. Base Sheet Flashing Ply Adhesive:

1. Green-Lock Flashing Adhesive: Cold applied solvent free flashing adhesive: zero V.O.C.
 - (a) Non-Volatile Content ASTM D 4586 100%
 - (b) Density ASTM D 1475 11.8 lbs./gal. (1.17 g/m3)
 - (c) Viscosity Brookfield 400,000 cPs.
 - (d) Flash Point ASTM D 93 400 deg. F min. (232 deg. C)

H. KEE Cap Sheet Flashing Ply Adhesive:

1. KEE-Lock Foam: Dual component, single bead (ribbon applied) urethane insulation/membrane adhesive.
 - (a) Tensile Strength (ASTM D 412) 250 psi
 - (b) Density (ASTM D 1875) 8.5 lbs./gal.
 - (c) Viscosity (ASTM D 2556) 22,000 - 60,000 cP
 - (d) Peel Strength (ASTM D 903) 17 lb./in.
 - (e) Flexibility (ASTM D 816) Pass @ -70deg. F (-56.7deg. C)

I. Surfacing:

1. Flashing Cap (Ply) Sheet:
 - (a) KEE-Stone FB 60 Flashing: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim. ASTM D 6754.
 - (i) *Breaking Strength, ASTM D 751, Proc. B, strip: 378 lbf*
 - (ii) *Tear Strength ASTM D 751: 120 lbf. minimum.*
 - (iii) *Elongation at Break (%), ASTM D 751, Proc. B, Strip: 40.0%*

3.09 Owner Supplied Material:

- A. Contractor must submit to the Owner as part of the submittal package all quantities of owner supplied materials needed to complete this project per specification section 07 52 00 a minimum of (6) weeks prior to project start date. Contractor must provide all labor to install owner supplied materials as part of their bid. All materials not specifically included in the owner supplied materials section will be the responsibility of the contractor to provide and install in compliance with section 07520. Contractor must return all overages to the Owner and under estimated quantities will be the full responsibility of the contractor to supply and install in full compliance with this section. Freight charges of Owner supplied materials will be the responsibility of the Owner. Contractor must take delivery of materials, properly cover and store at jobsite in a secured container Contractor must be able to provide certification in writing from roof system manufacturer that the contractor is approved to install the specified roof system and provide all warranty requirements of section 07 52 00.

End of Section

Sheet Metal Flashing and Trim

PART 1. GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counter flashings, and other items indicated on drawings and as follows:

1. Metal edge system with continuous cleats.
2. Through wall mounted counterflashing.
3. Skirt flashing at curbs.
4. Gutters, Fascia, Trim, Etc

1.02 RELATED REQUIREMENTS

A. Section 07 5550 – Modified Bitumen

1.03 REFERENCE STANDARDS

A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

C. ASTM A792 Steel Sheet, Aluminum-Zinc Alloy-Coated, by the Hot-Dip Process

D. ASTM B 32 - Standard Specification for Solder Metal.

E. ASTM B486 Paste Solder

F. ASTM B 749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.

G. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

H. ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

I. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.

J. FS QQ-L-201 Specification for Lead Sheet

K. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association.

1.04 SUBMITTALS

A. Product data: Provide manufacturer's specification data sheets for each product:

1. Metal material characteristics and installation recommendations.
2. Submit color chart prior to material ordering and/or fabrication so that equivalent colors to those specific can be approved.

B. Manufacturer's installation instructions for reglets.

C. Samples: Submit two samples 8x10 inch in size illustrating metal finish color.

1. Submit two samples, 12 x 12 inch in size illustrating typical external corner, internal corner, and valley, junction to vertical dissimilar surface, material and finish.

D. Certification:

1. Submit roof manufacturer's certifications that metal fasteners furnished are acceptable to roof manufacturer.
2. Submit roof manufacturer's certification that metal furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.
3. Submit certification that metal and fastening system furnished is Tested and Approved by Factory Mutual for 1-90 Wind Up-Lift Requirements.

E. Provide approval letters from metal manufacturer for use of their metal within this particular roofing system type.

F. Proof of fabricator and installer qualifications.

G. ANSI-SPRI ES-1 test results for all coping and edge metal.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements, except as otherwise indicated.

1. Factory Mutual Loss Prevention Data Sheet 1-49 windstorm resistance: 1-90.

B. Manufacturer's Warranty: Pre-finished metal material shall require a written 20-year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D-2244 or chalking excess of 8 units per ASTM D-659. If either occurs material shall be replaced per warranty, at no cost to the Owner.

C. Contractor's Warranty: The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be water-tight and secure for a period of five years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Aluminum: ASTM B209. 0.040 and greater as required by referenced standards for specific applications.

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1. Kynar coated.
 2. Color: manufacturers standard.
 - B. KEE Clad Metal:
 1. KEE Treated Coating.
 2. Color: White

2.02 ACCESSORIES

A. Fasteners:

1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
2. Fastening shall conform to Factory Mutual 1-90 requirements or as stated on section details, whichever is more stringent.

B. Plastic Cement: ASTM D 4586, Type I.

2.03 FABRICATION - GENERAL

A. Fabricate in accordance with referenced standards. Form sections true to shape, accurate in size, square, and free from distortion or defects. Form pieces as recommended by SMACNA standard for conditions required.

1. Provide reinforcements and supports as required for secure anchorage.
2. Make joints rigid. Seams mechanically strong and soldered or sealed to make watertight.
3. Fabricate corners in one piece with legs extending 30-inches each way to field joint. Lap, rivet, and solder or seal corner seams watertight.
4. Turn up "end dam" flanges at ends of opening sill flashing pieces, lap with wall flashing and membranes to shed water.
5. Fabricate cleats of same material as sheet, minimum 3/4 inches wide, interlockable with sheet.
6. Hem exposed edges on underside 1/2 inch; miter and seam corners.
7. Solvent clean all sheet metal. Coat surfaces to be in contact with roofing or otherwise concealed with specified asphaltic paint; 0.015-inch minimum uniform thickness.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.

F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.

2.04 EDGE METAL SYSTEM AND METAL COPING SYSTEM

A. R-Mer Span Flat Stock Sheets by The Garland Company.

1. ANSI SPRI ES-1 tested and certified.

2.05 ROOF-RELATED SHEET METAL AND FLASHINGS

A. Roof-Related Sheet Metal and Flashings: As indicated, as specified in related sections, as required by roofing material manufacturers and referenced standards. Coordinate work of this section with related sections. Provide complete systems without conflict or omission.

PART 3. EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

C. Beginning of installation means acceptance of existing conditions.

D. Field measure site conditions prior to fabricating work.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

A. Install work watertight, without waves, warps, buckles, fastening stress, or distortion, allowing for expansion and contraction. Conform to referenced standards. Make metal joints watertight.

B. Fastening of metal to walls and wood blocking shall comply with SMACNA Architectural Sheet Metal Manual, Factory Mutual 1-90 wind uplift specifications and/or manufacturer's recommendations whichever is of the highest standard.

C. All accessories or other items essential to the completeness of sheet metal installation and water tight envelope of the building, whether specifically indicated or not, shall be provided.

D. Reglets: Install in accordance with manufacturer's installation instructions.

E. Metal fascia and copings shall be secured to wood nailers at the bottom edge with a continuous cleat. Cleats shall be at least one gauge heavier than the metal it secures.

F. Install Sheet Membrane Waterproofing at closure flanges, under metal copings, caps and platforms; fully adhered, free of voids, blisters and buckling; roll as soon as practical following layout. Minimize exposure time to that period recommended by the manufacturer.

G. Flashing: Joints at 10-foot maximum spacing and at 2-1/2-feet from corners. Butt joints with 3/16-inch space centered over matching 8-inch long backing plate with sealer tape in laps.

H. Flanged flashings and roof accessories: Set on continuous sealer tape. Nail flanges through sealer tape and at 3-inch maximum spacing.

I. Isolate metal from dissimilar metal with 2 coats of specified asphaltic paint, sealer tape or other approved coating, specifically made to stop electrolytic action.. Use only stainless steel fasteners to connect isolated dissimilar metals.

J. Joints, fastenings, reinforcements and supports: Sized and located as required to preclude

distortion or displacement due to thermal expansion and contraction. Conceal fastenings wherever possible.

K. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

L. Flexible Flashing Installation:

1. Prime substrates as recommended by flexible flashing manufacturer, allow to dry.
2. Install flexible flashings in maximum feasible lengths to minimize lap joints.
3. Peel release paper from roll to expose rubberized asphalt and position flashing to center over joint location before applying. Move along opening or joint, being careful to put flashing as evenly as possible over the opening. Avoid fishmouths.
4. Press flashing firmly into place with heavy hand pressure. Ensure continuous and intimate contact with substrate.
5. If wrinkles develop, carefully cut out affected area and replace as outlined above.

M. Apply plastic cement compound between metal flashings and felt flashings.

N. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

O. Seal prefinished metal joints watertight.

P. Solder other metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.

Q. Connect downspouts and rain water leaders to storm sewer system. Seal connection watertight.

R. Install hatches and ladders per manufacturer's recommendations.

X. Install roof drains per manufacturer's recommendations.

3.04 FIELD QUALITY CONTROL

A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

B. Tolerances

1. Exposed surfaces: Free of dents, scratches, abrasions, or other visible defects; clean, ready for painting.
2. Set flashings and sheet metal to straight, true lines with exposed faces aligned in plane as indicated.

3.05 SHOP FABRICATED SHEET METAL

A. Installing Contractor shall be responsible for determining if the sheet metal systems are in general conformance with roof manufacturer's recommendations.

B. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.

C. Hem exposed edges.

D. Angle bottom edges of exposed vertical surfaces to form drip.

E. All corners for sheet metal shall be lapped with adjoining pieces fastened and set in sealant.

F. Joints for gravel stop fascia system, cap flashing, and surface-mount counterflashing shall be formed with a 1/4" opening between sections. The opening shall be covered by a cover plate or backed by an internal drainage plate formed to the profile of fascia piece. The cover plate shall be embedded in mastic, fastened through the opening between the sections and loose locked to the drip edges.

G. Install sheet metal to comply with Architectural Sheet Metal manual, Sheet Metal and Air Conditioning Contractor's National Associations, Inc.

End of Section

Aluminum Windows

Part 1. GENERAL

1.01 SECTION INCLUDES

- A. Provide AAMA-certified aluminum windows of performance classification indicated. Basis of Design is Basis of Design: WINCO Window Company 1150 Series Thermal with 1" IGU glass.
- B. Furnish all necessary materials, labor and equipment for the provision of aluminum frame windows including all necessary mullions, panning, trim, expanders, operation hardware, installation hardware and all other accessories required.
- C. Provide aluminum pan (panning) sill trim and compensation channels for all windows. All windows shall have weepage capability to allow any glazed panel to weep water down vertical frame members to building exterior.
- D. Provide sealing of all joints within each window assembly. Primary and secondary sealing of entire interior and exterior perimeter window unit after installation.
- E. Furnish and deliver extra materials as specified and spare parts for 10% of the project.

1.02 RELATED SECTIONS

- A. Section 01 73 20 – Selective Demolition
- B. Section 06 10 00 – Rough Carpentry
- C. Section 06 20 00 – Finish Carpentry
- D. Section 07 90 00 – Joint Sealers
- E. Section 08 80 00 – Glazing
- F. Section 09 90 00 – Painting- Existing Construction.

1.03 REFERENCES

- A. Except as otherwise indicated, requirements for aluminum windows, terminology and standards of performance, and fabrication workmanship are those specified and recommended in AAMA/NWWDA 101/I.S.2-97 and applicable general recommendations published by American Architectural Manufacturers Association (AAMA) and ASTM.
- B. Manufacturer shall be an active member in the AAMA Certification program.
- C. Performance and Testing (laboratory): Except as otherwise indicated, comply with air infiltration tests, water resistance tests and applicable load tests as specified in AAMA/NWWDA 101/I.S.2-97 for type and classification of window units required in each test.
- D. Testing (Laboratory): Where manufacturers standard window units comply with requirements and have been tested in accordance with such tests, provide certification by manufacturer showing compliance with such tests, otherwise, perform required tests through an AAMA recognized testing laboratory or agency, approved in advance by Owner's Representative and provide test results. The test shall be based upon a test unit of 5'0" x 8'0" with 5'0" x 3'0" vent size for projected windows.
- E. Test reports shall be no more than three years old.
- F. To evaluate testing and measure product performance, testing shall be constructed of manufacturer's standard production line with ¼" laminated glazing.
- G. Testing (Field): American Society of Testing Materials ASTM E-1105-00 Standard Test Method for Field Determination of Water Penetration of Installed Exterior windows,

Skylights, Doors, and Curtain Walls by Uniform or Cyclic Air Pressure Difference.
Architectural Testing, Inc. of Fresno, CA is an approved window tester.

- H. GANA (Glass Association of North America) Glazing Manual, current edition for information about primary and fabricated glass products, quality standards, design considerations, and specific glazing guidelines.

1.04 PERFORMANCE REQUIREMENTS

- A. The windows shall be Architectural Aluminum Fixed and/or Project-Out Windows in accordance with ANSI/AAMA 101 Voluntary Specifications for Aluminum and Poly Prime Windows and Glass Doors and AAMA 910, Voluntary "Life Cycle" Specifications and Test Methods for Architectural Grade Windows, Sliding Glass Doors for a Class and Grade of P(F)-HC70 and P(F)-AW70.
- B. B. Windows shall be AAMA AW60 grade as a minimum. Windows shall conform to specified AAAMA/NWWDA 101/I.S.2-97 – ANSI standards or the following, whichever are more stringent:
- C. Life cycle Testing: When tested in accordance with AAMA 910, there shall be no damage to fasteners, hardware parts, support arms, actuating mechanisms or any other damage which would cause the window to be inoperable. After 2,500 cycles, air and water resistance shall not exceed the performance requirements as specified.
- D. Air Infiltration Test: When closed and locked, test specimen shall be tested in accordance with ASTM E283 at a minimum vent size of 5' x 3'. The air infiltration rate shall not exceed 0.10 cfm/ft of vent perimeter at a static air pressure differential of 6.24 psf
- E. The glazed unit shall be mounted in its vertical position continuously supported around the perimeter and the sash placed in the fully closed position. The Window shall be subject to a water resistance test in accordance with ASTM E331 and ASTM E 547. When a static pressure of 12.00 pounds per square foot has been stabilized, five gallons of liquid water per square foot of window area shall be applied to the exterior face of the test specimen for a period of 15 minutes. No water is to pass the interior face of the window framing in accordance with the test method.
- F. Uniform Load Design Test: A minimum positive and negative pressure of 85 pounds per square foot shall be applied to the test unit in accordance with ASTM E330. This test load shall be maintained for a period of 10 seconds. At the conclusion of the tests, there shall be no glass breakage, permanent damage to fasteners, hardware, supports arms, actuating mechanisms, or any other damage causing window to be inoperable. Deflection is limited to L/175.
- G. Uniform Load Structural Test: A minimum positive and negative pressure of 105 (1 ½ times design load), pounds per square foot shall be applied to the test unit per ASTM E330. This test load shall be maintained for a period of 10 seconds. At the conclusion of the tests, there shall be no glass breakage, permanent damage to fasteners, hardware, supports arms, actuating mechanisms, or any other damage causing window to the inoperable. There shall be no permanent deformation of any frame or sash member in excess of 0.2% of its span.
- H. Condensation Resistance Test: The window shall be tested in accordance with AAMA 1502 standards. Thermal performance shall have a condensation factor of no less than 65 for non-thermally broken windows.
- I. Thermal Test: The window shall be tested in accordance with ASTM C236 with thermal transmittance of no more than 0.80 BTU/hr/ft²/°F at 15 mph wind for non-thermally broken windows with single glazing.

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- J. Field Testing: Contractor shall provide a complete mock-up of a typical window unit system, including any panning, compensating channels, installation of the specified sealant, etc. prior any placement of windows.
 - K. Mock-up: After visual inspection and after successful field testing per ASTM E-1105.00 – “Field Water Test for Windows Under Uniform Static Air Pressure Difference”, the mock-up, after written acceptance, shall be used as the standard of quality for the remainder of the work.
 - L. After 50% of the work is completed, Owner shall perform ASTM E-1105 on an installed window.
 - M. After 90% of the work is completed perform ASTM E-105 – “Field Water Test for Windows” on one installed window. Selection of test windows will be randomly selected by the Owner and/or the Owner’s Representative.
 - N. No uncontrolled water penetrating the glazing or the framing system is to appear on normally exposed interior surfaces from sources other than condensation. Water leakage does not include water controlled by flashing and gutters that is drained to the exterior and water that cannot damage adjacent materials or finishes. No uncontrolled water leakage shall be allowed at 80% of design load, or 9.6 lbs of pressure.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings: Submit shop drawings including ¼” scale for location floor plans and exterior wall elevations. Identify all window types accompanied with full size details of every composite member. Show anchors, specified hardware, operators and other components not included in manufacturer’s data. Include all glazing details and standards for factory glazed units. Include erection procedures for all components of window installation, including sealant applications, required type, size and spacing of anchors and any other specialized installation requirements. Shop drawings based on other than submitted product will not be reviewed and must be resubmitted.
- C. Product Data: Submit Manufacturer 's specifications, recommendations and standard details for aluminum window units, including certified test reports as necessary to show compliance with requirements under section 1.03.
- D. Provide maintenance manuals and parts lists.
- E. Provide manufacturer’s certification / guarantee that anodic finish meets specified criteria.
- F. Sample: Provide a small working sample of window unit, including specified glass and hardware. Include panning, flashing, sills, compensating channel, mullions or any other components that are required for complete system review, including all sealant applications. Show fabrication techniques, quality of component parts including full operation of awning windows, design and installation of specified hardware or any other exposed auxiliary items.
- G. Submit the same maintenance manuals that were used during the AW testing of the specified product.
- H. Provide test reports per the specific performance requirements: Windows shall conform to specified AAAMA/NWWDA 101/I.S.2-97 – ANSI under section 1.03. Certification from an independent registered AAMA testing laboratory that the tested window meets or exceeds the AAMA/NWWDA 101/I.S.2-97 – ANSI standards above following, whichever are more stringent.
- I. Provide certification that the installation contractor has a minimum of not less than 5 years of field window system installation experience similar to the contracted project. List previous

projects. Provide manufacturer's certification that the installation contractor has been trained and is qualified to install the specified window system.

- J. Mock-up: Provide first window installed as mock-up for testing by District AAMA-certified testing agent. Provide complete installation as indicated so that full scale window installation can be tested in place. Successfully tested mock-up may remain as a permanent part of the work.
- K. Provide window maintenance manual per AAMA requirements for AW rated windows. Turn over one copy to SFUSD PM as part of the closeout documents and another copy to Buildings and Grounds Department.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site, store, protect and handle under provisions of Section 01600 and manufacturer's instructions.
- B. Deliver, store, and handle materials in manner to prevent damaging.
- C. Deliver and store packaged materials in original containers bearing manufacturer's name.
- D. Deliver windows affixed with manufacturer's labels and do not remove labels prior to installation, inspection, or final approval.
- E. Protect all components of the window system against damage from the elements, construction activities and any other hazards before, during and after installation.

1.07 FIELD MEASUREMENTS

- A. Coordinate measurements of rough openings prior to fabrication. Indicate rough opening measurements in shop drawings to the Architect.

1.08 WARRANTY

- A. The responsible contractor and/or manufacturer shall assume full responsibility and warrant for ten (10) years the satisfactory performance of the total window system installation which includes, but is not limited to the windows, hardware, glass, glazing, anchorage and setting system, sealing, panning, flashing, labor, etc., as it relates to air or water leakage, operation and structural adequacy as referenced in the specifications and the approved shop drawings in accordance with AAMA 505-98. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at his expense during the warranty period. Warranty shall begin upon written notification of substantial completion by the Owner or Owner's Representative.
- B. Black Butyl Bedding Tape with Clear Silicon Cap Bead on top required for all window sealant shall be certified with a 10 year warranty for installation. The Silicon joint sealer that also be certified with a 10 year warranty.

1.09 ADDITIONAL MATERIAL

- A. Provide spare operating parts equal to 10% of all hardware pieces to SFUSD Glass Shop at Buildings and Grounds Department.

1.10 COORDINATION

- A. Coordinate the work with glazing, wall openings, and perimeter air and vapor seal to adjacent work.

Part 2. PRODUCTS

2.01 ALUMINUM WINDOWS

- A. Criteria:
 - a. Windows must be inside glazed.
 - b. Windows must be glazed at factory.
 - c. Awning windows will not project more than 4 inches maximum into a path of travel.
 - d. Grade Designation: HC70-AW70.
- B. Acceptable Manufacturers:
 - a. WINCO Window Company
 - b. Kawneer Company, Inc.
 - c. EFCO Corporation
 - d. Basis-of-Design –Architectural Class Windows: Basis of Design: WINCO Window Company 2” 1150 Series Thermal with 1” IGU laminated glass
 - e. Or approved equal. Provide documentation to demonstrate that proposed alternate meets the basis-of-design. Substitution Procedures: See Section 01 63 00 –Product Substitution Procedures
 - f. The aluminum window system to be provided under this section is to be supplied by a single manufacturer and must have an ANSI/AAMA label permanently attached.

2.02 MATERIALS

- A. General: Windows and associated accessories shall all be products of one manufacturer.
- B. Aluminum: 6063- T6 alloy tempered extrusion as recommended by the window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength and a yield of not less than 16,000 psi while complying with ASTM B221.
- C. All extruded frame, vents, sills, mullions, etc. shall have a minimum wall thickness of 0.125 inches.
- D. Panning systems shall have 0.125 inch minimum wall thickness at the sill. .
- E. Minimum frame and sash depth shall be 2 inches.
- F. Provide enlarged mullions at windows as indicated.
- G. Fasteners: Non-magnetic stainless steel (18-8) warranted by manufacturer to be non-corrosive and compatible with aluminum window members, panning, trim, flashing, hardware, and any other window system components.
 - a. Do not use exposed fasteners on exterior except where unavoidable for application of hardware. Where exposed screws are required, provide non-metallic stainless steel tamper-proof fasteners.
 - b. TEK screws, in any application, will not be permitted.
- H. Anchor clips and window accessories: Depending on the strength and corrosion - inhibiting requirements. Fabricate units of aluminum, non-magnetic stainless steel or hot-dip galvanized or zinc coated steel to comply with ASTM A 386.
- I. Compression Glazing Strips and Weather-stripping: Provide black butyl bedding tape with clear Silicon cap bead. All weather stripping gaskets are to be integral to window stops and warranted for 10 years. Separately installed "push-in" type not acceptable.

- J. Sealants: Unless otherwise indicated, fabricate window units with a silicone type-sealant which meets or exceeds the test requirements of ASTM Specification C920, Type S, Grade NS, Use T, NT, M, G and O:
- K. Cap bead at glazing: provide silicone type sealant which meets or exceeds ASTM Specification C-920, Type S, Grade NS, Class 25.
- L. Use NT, M,G,A and O as recommended by the window manufacturer for joint size and movement, to retain permanently elastic, non-shrinking and non-migrating.
- M. Provide clear sealant at exterior glazing, over glazing tape for watertight seal and provide a system warranty of 10 years.
- N. Silicon sealant shall be certified with a 5 year warranty separate from the butyl tape and sealant 10 year warranty.

2.03 Hardware

- A. Locking handles: Provide two cam type handles at each operable window:
 - a. Handles shall be aluminum-bronze alloy with polished-satin finish (US 25D).
- B. Project-out vent (awning type), use the following handles in conjunction with #282 series strikes (aluminum-bronze alloy, US 25D).
- C. Hand-Operated Handles: Bronze Craft #162-001-4504 (right-handed handle) or 162-003-4504 (left-handed handle)
- D. Pole-Operated Handles: Bronze Craft #164-001-4504 (right-handed handle) or 164-003-4504 (left-handed handle)
- E. Project-in vent, (hopper type), use the following handles in conjunction with #210 series keepers (aluminum-bronze alloy, US 25D)
- F. Hand-Operated Handles: Bronze Craft #156-001-4504 (right-handed handle) 156-003-4504 (left-handed handle)
- G. Pole-Operated Handles: Bronze Craft #158-001-4504 (right-handed handle) 158-003-4504 (left-handed handle)
- H. Hinges: Stainless Steel 4 bar hinge with stainless steel slide mechanism and adjustable limit stop (restraining block).
 - a. All awning vent hinges are to have a "restrictor block".
 - b. Storm Hinges adjustable limit stop (restrictor block) setting to be 4" where applicable for access compliance (to avoid excessive encroachment into a path of travel) or safety (to prevent falls).
- I. Operating Poles: Provide operating poles, pole tip, pole hanger, and pole ring for all operable windows whose bottom edge is 72" or more above the interior finished floor.
 - a. Pole ring shall be used on projecting (out or in) windows. Locate on middle of top rail of ventilator and indicate on shop drawings.
 - b. It shall be the responsibility of the sash installer to install one pole and pole hanger in each classroom and office.
 - c. Pole hook assembly: Aluminum tube with rubber end
 - d. Pole tip attached to pole with screws and epoxy.
 - e. Pole ring at aluminum windows.
 - f. Pole hangers all windows

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- J. Hardware Fasteners: Hardware Fasteners penetrating the frame or inside plane of the window shall be factory sealed with resilient, non-hardening compound per the manufacturers specifications. Hardware shall be installed with non-magnetic stainless steel round, Phillips head screws.
 - K. Gear-type Rotary Operators: meet the requirements of ASTM E405-04, Method A, when subjected to operating moments and closing torques specified in AAMA 101. Acceptable manufacturer: Clearline- Cable in conduit system for all operable vents over 8 feet from finished floor.
 - L. All glass pockets, fixed and ventilators, shall be weeped and baffled to provide positive drainage. Water shall be weeped to the exterior via frame weep slots protected by snap-in weep covers or integral drips.
 - M. All windows shall be factory glazed with 1/4" laminated glass. Bathroom windows shall be factory glazed with 1/4" white laminated glass. See specification section 08 80 00 – Glazing.

2.04 FINISHES

- A. Class 1 Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils (0.018 mm) thick; Bronze- Color to be selected during submittal process.
- B. Apply 1 coat of bituminous coating to concealed aluminum and steel surfaces in contact with dissimilar materials.

2.05 WINDOW TYPES

- A. Fixed windows: Frame components shall be mechanically fastened and sealed.
- B. Projected Windows: Frame depth shall present a flush interior and exterior surface. Frame components shall be mechanically fastened. Overlap or extension of ventilators beyond the main frame will not be acceptable. Each corner shall be mitered, reinforced with an extruded corner key (gusset block), hydraulically crimped, and cold welded with epoxy adhesive. Mechanical fasteners (screws) shall not be allowed. Each vent shall be a pressure equalized design. Compliance with AAMA 910-93 "Voluntary Life Cycle Specifications and Test Methods for Architectural Grade Windows."
- C. Combinations of operable and fixed units shall be accomplished by providing continuous jamb construction. No splicing shall be permitted along entire length of the jamb. Vertical sight lines at all fixed to operable horizontals shall be straight in line and shall not exceed 4 inches.
- D. Compensating Channels: Provide manufacturer's standard compensating channel system (minimum 10 year parts and labor warranty). Contractor to provide compensation channel system at windows where exterior installation is required and existing conditions do not allow for use of panning system.
- E. Extruded prime alloy aluminum 6063-T5 or T6 shall have a minimum wall thickness of 0.92" or thickness as required to meet the window design requirements, whichever is greater.
- F. Aluminum sections shall lock around window frame to provide a weathertight connection per the design requirements of the specified window, while allowing unrestricted expansion and contraction of the window within the system. Systems shall be secured at the corners with stainless steel screws in integral screw ports or stainless steel screws anchoring 1/8" thick aluminum end dams. Seal with joint sealer compatible with the specified sealant.

- G. Panning System: Provide manufacturers special panning system, (minimum 5 year manufacturing system). Extruded prime alloy aluminum 6063-T5 or T6 shall have a minimum wall thickness of 0.92". Provide profiles indicated.
- H. Aluminum sections shall lock around window frame to provide a weathertight connection per the design requirements of the specified window.
- I. System shall be secured at the corners with stainless steel screws in integral screw ports factory sealed with joint sealer compatible with other window sealants.
- J. Seal between the panning and the frame portion of the window shall be accomplished by continuous bulbous vinyl weather-strip cap with an exterior cap seal using a low modulus silicone sealant.

2.06 FABRICATION

- A. Provide manufacturer's standard fabrication and accessories which comply with indicated specification standards which shall re-glaze from the interior without dismantling of the sash framing. Include complete system assembly of components and anchorage of window units. Comply with Section 2.04, Window Types.
- B. Main frame and sash member shall have a minimum wall thickness of 0.125 inches with a minimum frame depth of 2.250 inches. Secondary members such as friction tabs, shoes, weather-stripping, etc., shall be of aluminum or a material compatible with aluminum.
- C. Life Safety Limit hardware shall comply with local state or government requirements (Title 24).

Part 3. EXECUTION

3.01 INSTALLATION

- A. Windows shall be installed, glazed and adjusted by experienced workers in accordance with the manufacturer's installation instructions and approved shop drawings.
- B. Remove old sash only when new windows are on-site, verified to fit, and ready to be installed.
- C. All openings shall be fully prepared to receive windows. Any debris must be removed and any corrective work completely finished prior to the start of window installation.
- D. Set units plumb, level and true to control lines, without warp or rack of frame or sash. Anchor securely in place at the required spacing with the specified type and size of anchor. Separate dissimilar materials from electrolytic action. Space shimming material shall conform to the specifications of the applicable AAMA standards
- E. Set sill members and compensation channel members in bed of sealant, and with joint fillers along with gasketing indicated to provide weathertight construction. Seal units following installation as required with the specified sealant to provide a weathertight system.
- F. Coordinate installation of sill members with sheet metal panning. Ensure that compensation channels set inside sill panning end dams. Provide continuous bead of sealant after windows are set on panning sills and into compensation channels. Follow manufacturer's written instructions.
- G. Owner shall employ an independent testing service to provide testing for water infiltrations and positive pressure per ASTM standards referenced. Owner's representative shall select windows at random for tests to be performed.

3.02 Field testing and inspection:

- A. Provide mock-up of window installation for acceptance by Architect and Owners window consultant.
- B. Field test and inspection as per AAMA 501.2 and ASTM E-1105.00 at the following milestones
 - a. First window installed.
 - b. After 50% and 90% of the window installation.
 - c. Testing and retesting shall be the paid by of the contractor.
 - d. Testing agency to be approved by the architect.
 - e. Submit test report to owner.

3.03 PROTECTION AND CLEANING

- A. Protect finished work under provisions of Division 0 and Division 1 sections.
- B. Adjustment: Immediately prior to final inspection/acceptance of the work, lubricate all hardware and adjust for proper operation.
- C. Cleaning: In addition to requirements of Section 01 77 00, clean debris or other deleterious substances from all surfaces of the internal drainage system and, immediately prior to final inspection/acceptance of the work ensure that weep holes from the internal drainage system are free of obstruction.
- D. After installation, mark glass pane with an "X" by using removable plastic tape or paste. Remove tape prior to substantial completion.

End of Section

Glass and Glazing

Part 1. General

1.01 Summary

- A. Section Includes: Insulating glass units.

1.02 Related Sections

1. Drawings, General and Supplementary Conditions of the Contract, Division 1 and the following Specification Sections, apply to this Section.
2. Section 08 44 00 – Curtain Wall and Glazed Assemblies
3. Section 08 50 00 – Windows

1.03 References

- A. ANSI Z97.1 - American National Standard for Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
- B. ASTM C162 - Standard Terminology of Glass and Glass Products.
- C. ASTM C1036 - Standard Specification for Flat Glass.
- D. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass -- Kind HS, Kind FT Coated and Uncoated Glass.
- E. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Glass.
- F. ASTM E1300 - Standard Practice for Determining the Minimum Thickness and Type of Glass Required to Resist a Specified Load.
- G. ASTM E2188 - Standard Test Method for Insulating Glass Unit Performance.
- H. ASTM E2189 - Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units.
- I. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
- J. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
- K. Insulating Glass Manufacturers Alliance (IGMA) - Glazing Guidelines.
- L. GANA Glazing Manual; Glass Association of North America.
- M. GANA Sealant Manual; Glass Association of North America.
- N. Oldcastle BuildingEnvelope® - Glazing Instructions.

1.04 Definitions

- A. Sealed Insulating Glass Unit Surfaces & Coating Orientation:
 1. Surface 1 – Exterior surface of outer pane (surface facing outdoors of outboard lite).
 2. Surface 2 – Interior surface of outer pane (surface facing indoors of outboard lite).
 3. Surface 3 – Exterior surface of inner pane (surface facing outdoors of inboard lite).
 4. Surface 4 – Room side surface of inner pane (surfacing facing indoors of inboard lite).

1.05 System Description

- A. Design Requirements
 - 1. Provide glazing systems capable of withstanding normal thermal movements, windloads and impact loads, without failure, including loss due to defective manufacture, fabrication and installation; deterioration of glazing materials; and other defects in construction.
 - 2. Provide glass products in the thicknesses and strengths (annealed) required to meet or exceed the following criteria based on project loads and in-service conditions per ASTM E1300.
- B. Minimum thickness of annealed glass products is selected, so the worst-case probability of failure does not exceed the following:
 - 1. 8 breaks per 1000 for glass installed vertically or not over 15 degrees from the vertical plane and under wind action.
 - 2. 1 break per 1000 for glass installed 15 degrees or more from the vertical plane and under action of wind and/or snow.
- C. Glass shall be as consistent as possible for each building and each adjacent window

1.05 Submittals

- A. Submit 12-inch (305mm) square samples of each type of glass indicated (except clear monolithic glass products), and 12-inch (305mm) long samples of each color required (except black) for each type of sealant or gasket exposed to view.
- B. Submit manufacturer's product data sheet and glazing and maintenance instructions.
- C. Glazing contractor shall obtain compatibility and adhesion test reports from sealant manufacturer, indicating that glazing materials were tested for compatibility and adhesion with glazing sealant, as well as other glazing materials including insulating units.
- D. Glazing Contractor shall provide certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.
- E. Submit as required under section 01 33 00. All glazing types.

1.06 Quality Assurance

- A. Comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this section or referenced standards.
 - a. GANA Publications
 - b. AAMA Publications
 - c. IGMA/IGMAC Publications
 - d. FGMA Glazing and Sealant Manuals

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- B. Safety glass products are to comply with CPSC 16 CFR Part 1201 for Category II materials.
 - C. Provide safety glass permanently marked with the company name or logo and CAN/CGSB-12.1-M if the product meets categories 1 and 2, or mark as CAN/CGSB 12.1-M-1 if the product meets the requirements of Category 1 only.
 - D. Insulating Glass products are to be permanently marked either on spacers or at least one insulating unit component with appropriate certification label of inspecting and testing agency indicated below:
 - E. Insulating Glass Certification Council (IGCC)
 - F. Single-source fabrication responsibility: All glass fabricated for each type shall be processed and supplied by a single fabricator.

1.07 Delivery, Storage And Handling

- A. Comply with manufacturer's instruction for receiving, handling, storing and protecting glass & glazing materials.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Exercise exceptional care to prevent edge damage to glass, and damage/deterioration to coating on glass.
- E. Where insulating glass units will be exposed to substantial altitude changes, comply with insulating glass fabricator's recommendations of venting and sealing.

1.08 Project / Site Conditions

- A. Environmental Requirements: Installation of glass products at ambient air temperature below 40 degrees F (4.4 degrees C) is prohibited.
- B. Field Measurements: When construction schedule permits, verify field measurements with drawing dimensions prior to fabrication of glass products.

1.09 Warranty

- A. Provide a written 10-year limited warranty from date of manufacture for insulating glass. Warranty covers deterioration due to normal conditions of use and not to handling, installing, protecting and maintaining practices contrary to glass manufacturer's published instructions.
- B. Installation: Glazing assemblies shall be warranted against water leakage for a period of Ten (10) years.
- C. Material: Laminated Glazing assemblies shall be warranted against delamination for a period of Ten (10) years.
- D. Field Measurements

Part 2. Products

2.01 Manufacturers

- A. Manufacturer is used in this section to refer to a firm that produces primary glass or fabricated glass as defined in the referenced standards.

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- a. Oldcastle Building Envelope®
 - b. Guardian Industries
 - c. Pilkington
 - d. PPG Industries

2.02 Sealed Insulating Glass (IG) Units

A. 1" Insulating Glass Unit Makeup

1. Outboard Lite

- (a) Glass Type: **Laminated**- ASTM C1036, Type 1, Class 1 Quality Q3
 - (a) Interlayer: **Min 0.30 mil Clear (PVB)** Polyvinyl Butyral Core
- (b) Glass Tint: **Tinted Grey**
- (c) Nominal Thickness: **1/4"**
- (d) Glass Strength: **Annealed**
- (e) Coating Orientation: **Surface 02 Solarban 90XL coating**

2. Spacer

- (a) Nominal Thickness: **1/2"**
- (b) Gas Fill: **90% Argon**

3. Inboard Lite

- (a) Glass Type: **Laminated**- ASTM C1036, Type 1, Class 1 Quality Q3
 - (b) Interlayer: **Min 0.30 Mil Clear (PVB)** Polyvinyl Butyral Core
- (b) Glass Tint: **Clear**
- (c) Nominal Thickness: **1/4"**
- (d) Glass Strength: **Annealed**
- (e) Coating Orientation: **No Coating**

B. Performance Characteristics (Center of Glass)

- 1. Visible Transmittance: 53.0 %
- 2. Visible Reflectance: 15.0 %
- 3. U-factor (U-value): 0.29
- 4. Shading Coefficient (SC): 0.48
- 5. Solar Heat Gain Coefficient (SHGC): 0.23
- 6. Provide hermetically sealed IG units with dehydrated airspace, dual sealed with a primary seal of polyisobutylene (PIB) and a secondary seal of silicone or an organic sealant depending on the application.

- C. Insulating glass units are certified through the Insulating Glass Certification Council (IGCC) to ASTM E2190.
- D. Annealed float glass shall comply with ASTM C1036, Type I, Class 1 (clear), Class 2 (tinted), Quality-Q3.
- E. Glass shall be annealed as required by codes, or as required to meet thermal stress and wind loads.
- F. Glass heat-treated by horizontal (roller hearth) process with inherent roller wave distortion parallel to the bottom edge of the glass as installed when specified.

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- G. Select appropriate glazing sealants, tapes, gaskets and other glazing materials of proven compatibility with other materials that they contact. These include glass products, insulating glass unit seals and glazing channel substrates under installation and service conditions, as demonstrated by testing and field experience
 - H. All Products shall be in accordance with SFUSD District standards. To be obtained prior to construction.

2.02 Accessories

- A. Glazing Sealant: ASTM C920, Type S, Grade NS, elastomeric one-component silicone glazing sealants as recommended by sealant manufacturer for application involved. Tape seals.
 - 1. Acceptable Manufacturers:
 - (a) Dow Corning Corp., "795 Silicone Building Sealant"
 - (b) General Electric Co., "Silglaze N"
 - (c) Pecora Corp.
 - (d) Tremco Corp.
 - (e) Substitutions: Refer to Section 01630.
 - 2. Color: clear.
- B. Setting blocks: Neoprene, EPDM, or silicone; tested for compatibility with glazing compound; of 70 to 90 Shore A hardness; 4" long x 3/8" thick x 1/4" high standard setting blocks.
- C. Spacer Shims: Silicone compatible, 50 Shore A durometer hardness; corners shall be vulcanized; 3" long x 3/32" thick x 1/4" high.
- D. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10-15 Shore A durometer hardness; coiled on release paper; black color.
- E. Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.
- F. Fabrication of glass and other glazing products
 - (a) Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.
 - (b) Grind smooth and polish exposed glass edges.
 - (c) Provide label on the glass indicating that glass is laminated safety glass.

Part 3. Execution

3.01 Examination

- A. Examine openings to receive glass for defects that would affect glass and glazing work. Verify that glazing channels are free of irregularities, burrs, moisture, debris, coatings and foreign matter that could adversely affect glass installation and performance.

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- B. Verify that openings for glazing are correctly sized and free of deviations beyond allowable tolerances for the installation of sealant.
 - C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
 - D. Verify that glass is free of face and edge imperfections and damage.
 - E. Do not start glazing until defects have been corrected. Beginning installation means acceptance of substrate.
 - F. Verify that Solar Control and Low-E glazing is provided at locations indicated.

3.02 Preparation

- A. Clean glazing channels and framing members to receive glass immediately before glazing; remove coatings not firmly bonded to substrate.
- B. Seal porous glazing channels or recesses with primer or sealer compatible with substrate. Apply primer to joint surfaces where recommended by sealant manufacturer.
- C. Clean contact surfaces with solvent and wipe dry.
- D. Prime surfaces specified to receive sealant.
- E. Field Measurements:
 - 1. Measure size of each frame and opening to receive glass.
 - 2. Determine actual glass sizes within dimensions and tolerances established, allowing for edge clearances.

1.01 Installation

- A. Comply with FMGA Glazing Manual and Sealant Manual, GANA Sealant Manual and glazing manufacturer instructions.
 - 1. Do not allow glass to touch metal surfaces.
- B. Factory Glaze **ALL** Windows. Field glazing is not acceptable.
- C. Install glass on dry surfaces.
- D. Place setting blocks at quarter points in thin course of sealant.
- E. Install removable stops with glass centered in space with spacer shims at 2'-0" intervals on both sides of glass, 1/8" below sightline.
- F. Sealant Glazing: Fill gap between glass and stops with sealant to depth equal to bite of frame on glass but not more than 3/8" below sightline.
 - 1. Apply sealant to uniform and level line, flush with sightline; tool or wipe sealant surface for smooth appearance; at exterior locations tool sealant so water is carried away from glass.
 - 2. Apply sealants within temperature ranges specified by manufacturer.
 - 3. Keep glazing tape on the outside facing side of the sash opening and not more than 3/16" below the sight line.
- G. Do not field cut, nip, or abrade glass.

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- H. Gasket Glazing: Miter-cut and bond ends together at corners to prevent gaskets from pulling away at corners.
 - I. Unify appearance of each series of lights by setting each piece to match others, as nearly as possible, with pattern, draw, and bow oriented in the same direction.
 - J. Prevent glazing materials containing solvent or oil from coming into contact with laminated glass.

1.02 Field Quality Control

- A. Field inspection will be performed under the provisions of Section 01400.
- B. Project Inspector will monitor quality of glazing

1.03 Cleaning

- A. Mark glass after installation by crossed streamers attached to framing and held away from glass; do not apply markers to surface of glass.
- B. Remove nonpermanent labels immediately after sealant cures; cure sealants for high early strength and durability.
- C. Remove and replace glass which is broken, chipped, cracked, abraded or damaged during construction period, including natural causes, accidents and vandalism.
- D. Clean both sides of glass prior to turning project over to Owner.

1.04 Protection of finished work

- A. Protect finished work.
- B. Mark glass pane with an "X" by using removable plastic tape or paste. Remove marks prior to time of substantial completion or occupancy.

End of Section

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Exterior Cement Plaster

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, apply to the work specified in this section.
- B. Parts 1,2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
General	Exterior Cement Plaster at alterations to roof access door from mezzanine Patching of existing cement plaster at new opening in parapet wall for HVAC ductwork

- B. Related work may be described in other sections of this Project Manual. All sections of this project manual are related. Contractor shall coordinate the work of this section with all other sections.

1.03 Submittals

- A. Provide the following submittals per the requirements of Division 1.

Item	Description
Catalog Cuts	n/a
Product Data	n/a
Samples	Samples of finish texture
Shop Drawings	n/a
Schedule	Include Schedule entry on Gantt Chart for Installation

1.04 References/Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References	Lath and plaster shall meet or exceed the applicable requirements of the 2016 California Building Code, and the latest edition of the following American National Standards Institute (ANSI) Specifications <ul style="list-style-type: none"> • A42.2-1971 Specifications for Portland Cement and Portland Cement-Lime Plastering, Exterior (Stucco)
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- and Interior
- A42.3-1971 Specifications for Lathing and Furring for Portland Cement and Portland Cement-Lime Plastering, Exterior (Stucco) and Interior
- Fabricate vertical elements to limit finish surface to 1/240 deflection under lateral point load of 100 LBS
- Fabricate horizontal elements to limit finish surface to 1/240 deflection under superimposed dead load and wind uplift loads

1.05 Quality Assurance

- A. Provide the following per Division 1

Item	Description
Supervision	Full time supervision and observation by the Contractor of all on-site Construction Activities including ordering, procurement and delivery of all materials and products manufactured or assembled off-site.
Qualifications of Workers	General Contractor shall ensure that all workers providing labor on this project are fully competent and experienced in the area of work being performed. General Contractor shall require subcontractors to remove any unqualified workers from the project.
Product Acceptance	General Contractor (Superintendent) shall verify and accept all products delivered to site prior to installation.
Substrate Acceptance	General Contractor (Superintendent) shall verify all substrates / conditions prior to allowing installation of any item.

1.06 Quality Control by Contractor

- A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract Documents.

Item	Description
Supervision	Per Division 1
Testing	n/a
Special Inspections	n/a
Mock Ups	n/a

1.07 Quality Control by Owner

- A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract.

Item	Description
Observation	Per Division 1.
Inspection	Per CCR Title 24: Continuous Inspection by DSA Certified inspector
Testing	Refer to DSA Testing and Inspection Sheet
Special Inspections	Refer to DSA Testing and Inspection Sheet

1.08 Closeout

- A. Provide the following Close Out materials in accordance with Division 1.

Item	Description
Product Manuals	Maintenance and Operations instructions / manuals provided by all product / material manufacturers.

1.09 Warranty

Provide written warranty in accordance with Division 1

Item	Description
Warranty Form	Per Division 1
Warranty Period	1 year
Warranty Start	Date of Substantial Completion

Part 2. Products**2.01 Materials**

- A. Building Moisture Barrier: 2 – layers, 60 minute Grade D Building Paper, ASTM D-828, as tested per ASTM E-96
- B. Lath: Stucco Netting: Standard No. 17 gauge, 1-1/2-inch mesh, galvanized stucco lath, self-furring on sheet of waterproofed, breather building paper Grade "D" (FS QQ-L-101C and UU-B-790a, Type 1), K-Lath: Double Paper Stucco-Rite (470bD).
- C. Lathing Accessories: Not less than No. 26 gauge steel, zinc-coated by Superior, Western Metal Lath, Inryco/Milcor, or Keene Furnish and install all inside and outside corner reinforcement, casing beads, base, drip, and weep screeds, strip lath, control and expansion joints, wall reveals, soffit vents, and any other accessories indicated or required to complete the installation. 7/8" typical ground size thickness.
- Foundation sill weep screed (perforated)/stucco stop: Western Metal Lath No. 7 Foundation Weep Screed, 26 gauge-galvanized steel.
 - Control Joint: Western Metal Lath No. XJ15-3 control joint, 26 gauge galvanized steel.
 - Internal Corner Control Joint: Western Metal Lath No. 30 internal corner control joint, 26 gauge-galvanized steel.
 - Casing Bead: Western Metal Lath No. 66 Expanded Flange Casing Bend, 24 gauge, galvanized steel.
 - Soffit Vent: Superior Metal Trim "F" Mold Soffit Vent, 26 gauge, galvanized steel. 2 1/2" face opening, unless otherwise noted on the Drawings.
 - External Corner Reinforcement: Stockton "Corneraid" exterior corner reinforcing.
- D. Lath Tie Wire: No. 18 gage galvanized soft steel wire.
- E. Lath Fastenings:
- Nails for attaching stucco lath to wood framing and sheathing shall be galvanized box or roofing nails, long enough to penetrate sheathing and framing to minimum depth of 1-1/4 inches. At the Contractor's option, #14 or #16 gage galvanized wire staples may be used, providing again they shall penetrate sheathing and framing to depth of 1 inch. Nails or staples shall securely engage the back wires of self-furring lath and penetrate framing as required for holding power. For standard or plain stucco netting, use standard furring nails, furring from 1/4 inch to 3/8 inch, with minimum penetration into framing of 1-1/4 inches.
- F. Portland Cement Plaster:

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1. Thickness: Typically, unless otherwise shown, 7/8" total, scratch, brown, and finish at 3/8, 3/8 and 1/8" coat thickness each, respectively; proportions in accordance with ASTM C926.

Part 3. Execution

3.01 Delivery, Storage, and Handling

- A. Deliver manufactured materials in their original packages and containers, bearing name of manufacturer and brand.
- B. Store cement, plaster, and lime in assigned room or area and away from damp surfaces.
- C. Remove any damaged or deteriorated materials from the site.

3.02 Application of Building Paper

- A. Install Building Moisture Barrier, before installing lath, over all exterior sheathing board for surfaces to receive cement plaster as follows:
 1. Apply asphalt felt moisture barrier over sheathing horizontally, lapping sides 2 inches to weather and ends 6 inches. Secure sufficiently with staples to hold in place without sagging until second layer is applied.
 2. Apply second layer of asphalt 30 lb. felt moisture barrier horizontally at mid-point of first layer, lapping sides 2 inches to weather and ends 6 inches. Apply vertical layer over 1 layer at outside and inside corners.
- B. All window, door, vent, utility pipe, etc. penetration through cement plaster walls and surfaces shall comply with the Western Conference of Lathing and Plastering Institutes, Inc. "Penetration Flashing Recommendation"

3.03 Installation of Lath and Accessories

- A. Apply lath directly over Moisture Barrier with fasteners to sheathing and framing members hereinbefore specified, spaced not more than 6 inches apart vertically and 16 inches apart horizontally, directly over framing members. Nails shall engage the lath securely with washers as required. Laps of plaster lath shall be 1 inch minimum and shall be laced with #18 gage galvanized soft steel wire. If plain or standard stucco netting is used, apply in same manner, except that fasteners shall include furring washers.
- B. Install all required plaster grounds, base, drip, and weep screeds, corner reinforcement, special stops, control joints, strip lath, soffit vents, and other metal accessories. Apply and shim out to required thickness. Set plumb, level and straight, free of kinks and bends. Install casing beads or stops at the edges of all plaster continuously.
- C. Provide expansion joints or control joints where indicated or required by referenced standards. Location of all control joints shall be approved by the Architect prior to installation do not install in conspicuous location unless approved by the Architect. Intersections and splices of control joints shall be set in continuous bead of sealant. Control joints, expansion joints, wall reveals and soffit vents shall be cleaned and clear of plaster within the control, expansion, reveal and vent areas after plaster application and before final plaster set. Do not use sharp instruments or tools that might remove galvanized coating from plaster accessories.

3.04 Preparation for Applying Cement Plaster

- A. Verify that surfaces to be plastered are free of dust, loose particles, oil, rust and other foreign matter that would adversely affect bond of plaster coats.

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- B. Wherever J-mold is used as edge condition for selected finish Contractor shall adhere to the following intention: adjacent components such as doors, windows, cabinets, etc. shall be installed prior to ensure control of reveal. J-mold trim is part of the finish and, by definition shall fit to other components. Other components shall not be made to fit to the J-Mold.
 - C. Scratch and brown coats of cement plaster shall consist of ingredients proportioned as follows: 1 part Portland cement to not less than 3 parts aggregate, and not more than 10% of lime putty. Finish coat shall consist of 1 part Portland cement to not less than 3 parts fine aggregate, and not more than 20% of lime putty.

3.05 Application of Cement Plaster (Stucco)

- A. Exterior cement plaster (stucco) shall be applied in three-coat work to a minimum thickness of 7/8-inch, and shall be finished in an even carpet float finish. Provide sample for Architect's approval prior to commencing work.
 - 1. *Scratch Coat:* Scratch coat shall be applied to minimum thickness of 3/8-inch, completely embedding the lath. Scratch coat shall be scratched horizontally to provide mechanical key, and left to cure and dry a minimum of 14 days before applying brown coat. Scratch coat shall be kept moist for a minimum period of 7 days after application.
 - 2. *Brown Coat:* Brown coat shall be applied to minimum thickness of 1/4-inch to 3/8-inch in two applications and shall be brought to a true, even plane by rodding and floating, and shall be left rough and ready to receive the finish coat. Scratch coat shall be dampened to provide suction before applying brown coat. Brown coat shall be left to dry a minimum of 10 days, and shall be kept moist for a minimum period of 4 days after application.
 - 3. *Finish Coat:* Finish coat shall be laid out to permit the completion of an entire surface in one operation. Finish coat shall be applied to minimum thickness of 1/8-inch, or in such thickness as may be necessary to ensure the full thickness specified, or other thickness indicated, as required for this Work. Follow manufacturer's application instructions.

3.06 Work Quality

- A. Exterior Cement Plaster shall be of the highest quality and finish. Intersections of planes shall be sharp and accurate. Plane surfaces shall finish plumb, straight, and true to an 8-foot straight edge. Workers shall employ 8-foot screeds (where possible) during application of brown and finish coats.
- B. Where plaster stops, screeds, control or expansion joints, angles, wall panels, or other features are employed for architectural treatment, panels framed by these accessories or other construction shall be finished in one operation. No stopping vertically or horizontally in the middle or intermediate area of a panel will be permitted.
- C. Imperfections that occur after curing and drying shall be repaired or replaced to the extent the corrections require up to the next appropriate break point in all directions to the satisfaction of the Architect at no additional cost to the District.
- D. Doubling back of the brown coat of plaster within 48 hours of application of scratch coat will be permitted, providing the recommendations of the Plastering Industry Bureau (PIB) are accurately followed. Arrange for PIB to provide job service, at no additional cost to the Owner, to assure a finished stucco application without shrinkage cracks.

3.07 Curing of Plaster

- A. Cement plaster (stucco) shall be cured for a minimum period of 4 days after completion. Moistening shall begin as soon as the plaster has hardened sufficiently. Water shall be applied with a soft, fine brush or other approved method. Soaking of walls shall be avoided.

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- B. Apply only as much water as will be readily absorbed. Plaster shall be protected from uneven and excessive evaporation during hot, dry weather. Contractor shall provide for curing on Saturdays and Sundays and holidays, if necessary.
 - C. Protect exterior cement plaster against damage from cold or too rapid drying or from any other cause.

3.08 Protection

- A. Surfaces adjacent to plastering work shall be protected from spattering or other staining caused by plastering. Any surfaces so spattered or stained shall be cleaned to the satisfaction of the Architect within 24 hours of application. Contractor shall be responsible for repairing work with stains.
- B. Protect plasterwork from subsequent construction and finishing activities, and maintain protection until acceptance of the Project by the Owner.

End of Section

Portland Cement Stucco

Part 1.

General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions and Division 1, General Requirements, Apply to the work specified in this section.
- B. Part 1, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of all work of this Contract.
- B. Applications of portland cement plaster specified in this section

Item
General

Description

- Section includes: Work includes all labor, materials, and equipment necessary to install all aspects of portland cement plaster.

1.03 References

- A. American National Standards Institute (ANSI) / American Hardboard Association (AHA):
 1. ANSI/AHA A 194 - Cellulosic Fiber Board.
- B. ASTM International (ASTM):
 1. ASTM A 641/A 641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 2. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 3. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
 4. ASTM C 150 - Standard Specification for Portland Cement.
 5. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
 6. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.
 7. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 8. ASTM C 595 - Standard Specification for Blended Hydraulic Cements.
 9. ASTM C 847 - Standard Specification for Metal Lath.
 10. ASTM C 897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.
 11. ASTM C 926 - Standard Specification for Application of Portland Cement-Based Plaster.
 12. ASTM C 932 - Standard Specification for Surface-Applied Bonding Agents for Exterior Plastering.
 13. ASTM C 933 - Standard Specification for Welded Wire Lath.
 14. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 15. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete.

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16. ASTM C 1002 - Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 17. ASTM C 1032 - Standard Specification for Woven Wire Plaster Base.
 18. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
 19. ASTM C 1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 20. ASTM C 1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units.
 21. ASTM C 1328 - Standard Specification for Plastic (Stucco) Cement.
 22. ASTM C 1396 - Standard Specification for Gypsum Board.
 23. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- C. Federal Specification (FS):
1. FS UU-B-790a - Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water Repellant and Fire Resistant).
- D. ICC Evaluation Service, Inc. Code Report
1. ICC-ES AC11 Cementitious exterior wall coatings.

1.04 System Description

- A. General: Portland cement plaster is comprised of a water-resistive barrier, metal lath, scratch and brown coats, and a finish coat.
- B. Application Methods: The plaster is applied directly to the structures shown and described on the drawings.
- E. **Concrete or Pre-cast Concrete Substrate:** 2-coat, Portland cement plaster applied over concrete consisting of the following:
1. 2-coat plaster system.
 - a. *3/8"- 1/2" Spec Mix Fiber Base Coat (FBC).*
 - b. *Spec Mix Finish Coat.*
- F. **Concrete Block, CMU Substrate:** 2-coat, Portland cement plaster applied over concrete block consisting of the following
1. 2-coat plaster system.
 - a. *3/8"- 1/2" Spec Mix Fiber Base Coat (FBC).*
 - b. *Spec Mix Finish Coat.*
- G. **Wood Sheathing Substrate:** 2-coat, Portland cement plaster applied over [wood] or [steel] studs and wood sheathing consisting of the following:
1. Secondary Weather Barrier over sheathing.
 2. Self-furring metal lath.
 3. 2-coat plaster system.
 - a. *3/8"- 1/2" Spec Mix Fiber Base Coat (FBC).*
 - b. *Spec Mix Finish Coat.*

1.05 Submittals

- A. Product Data: Submit all product data sheets, evaluation reports, details, and warranty information.
- B. Samples: A 3'x3' sample of each type of finish coat shall be produced on-site to match existing building as required to represent the color and texture to be utilized on the project

and produced using the same techniques and tools required to complete the project. Retain approved samples at the construction site throughout the application process.

1.06 Quality Assurance

- A. Qualifications:
 - 1. Manufacturer: System component materials shall be manufactured by Omega Products International, Inc. or approved equal.
- B. Plastering Contractor:
 - 1. Shall specialize in cement plasterwork.
 - 2. Shall provide proof of current contractor's license and bond.
- C. Regulatory Requirements:
 - 1. Conform to applicable code requirements for finish system.

1.07 Delivery, Storage, and Handling

- A. Delivery: Deliver all materials to the construction site in their original, unopened packaging with labels intact.
- B. Inspection: Inspect the materials upon delivery to assure that specified products have been received.
- C. Storage: Store all products per manufacturer's recommendations. Store materials in a cool, dry location; away from direct contact with the ground and/or concrete; out of direct sunlight; and protect from weather and other damage.

1.08 Project Conditions

- A. Environmental Requirements: Follow product manufacturer's recommendations for environmental conditions and surface preparation.
 - 1. Temperatures: Before, during and following the application of the portland cement plaster, the ambient and surface temperatures must remain above 40°F (4°C) for a minimum period of 24 hours. Protect stucco from uneven and excessive evaporation, especially during hot, dry and/or windy weather. Protect the portland cement plaster from freezing for a period of not less than 24-hours after set has occurred.
 - 2. Substrates: Prior to installation, inspect the wall for surface contamination or other defects that may adversely affect the performance of the materials, and shall be free of residual moisture. Do not apply the portland cement plaster to substrates whose temperature are less than 40°F (4°C) or contain frost or ice.
 - 3. Inclement Weather: Protect applied material from inclement weather until dry.

1.09 Sequencing and Scheduling

- A. Sequencing: Coordinate the installation of the portland cement plaster with all other construction trades.
- B. Staffing: Provide sufficient manpower to ensure continuous operation, free of cold joints, variations in texture, etc.

1.10 Warranty

- A. System Warranty: Submit documentation on Omegaflex Primer and Omegaflex Finish standard warranties. At completion of work, provide written system warranty documentation.
- B. Warranty Length: Five (5) years commencing at the time of substantial completion.

1.11 Maintenance

- A. The following materials shall be presented to the District following the application of the work:
 - 1. One container of finish for each color and texture utilized on the project.
 - 2. A maintenance program for finishes as required.

Part 2. Products

2.01 Manufacturers

- A. Acceptable Manufacturer: Omega Products International, Inc. or approved equal.

2.02 Scratch and Brown Coat

- A. Cement: A low alkali portland cement-based stucco complying with ASTM C150.
- B. Sand:
 - 1. Sand must be clean and free from deleterious amounts of loam, clay, silt, soluble salts and organic matter.
 - 2. Sampling and testing must comply with ASTM C144 or C897.
- C. Water: Clean and potable without foreign matter.

2.03 Water-Resistive Barrier

- A. Over Open Framing and non-Wood-based sheathing: AkroGuard: Acrylic-based, vapor permeable water-resistive/air barrier coating manufactured by Omega Products International, Inc. or approved equal.

2.04 Lath

- A. Expanded Lath: Nominal 2.5 lb/yd² weight, galvanized steel complying with ASTM C847.

2.05 Accessories

- A. Caulking: Acrylic latex complying with ASTM C834, Polyurethane, polyurethane modified, polysulfide, or silyl-terminated polyether elastomeric sealant complying with ASTM C920.
- B. Vapor Retarder: A vapor retarder complying with the International Energy Conservation Code (IECC) Section 402.5 or 502.5 or IRC Section R318.1 must be provided.
- C. Flashing: Flashing complying with UBC Section 1404.2, IBC Section 1405.3 or IRC Section R703.8, as applicable, must be provided.
- D. Fasteners: Nails, staples, or screws used to rigidly secure lath and associated accessories shall be corrosion-resistant and meet the minimum requirements of ASTM C1063.
- E. Zinc and Zinc-Coated (Galvanized) Accessories: The following accessories shall be fabricated from zinc or zinc-coated (galvanized) steel.

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1. Corner Aid: Minimum 26-gauge thick; expanded flanges shaped to permit complete embedding in plaster; minimum 2 in. wide; Square-edge style; use unless otherwise indicated.
 2. Strip Mesh: Metal Lath, 3.4 lb/yd² expanded metal; 6 in. wide x 18 in. long.
 3. Vent Screed: Minimum 26-gauge thick; thickness governed by plaster thickness; minimum 4-inch (102 mm) width, double "V" profile, with perforated expanse between "V's" of longest possible lengths.
 4. Casing Bead: Minimum 26-gauge thick; thickness governed by plaster thickness; maximum possible lengths; expanded metal flanges, with square edges.
 5. Drip Screed: Minimum 26-gauge thick, depth governed by plaster thickness, minimum 3-1/2 in. high flange, maximum possible lengths.
 6. Control and Expansion Joints: Depth to conform to plaster thickness; use maximum practical lengths.
 - a. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; removable protective tape on plaster face of control joint.
 - b. Expansion Joints: Pair of casing beads with sealant between.
 - F. Plastic Trim: Fabricated from high-impact PVC.
 1. Cornerbeads: With perforated flanges. Square-edge style; use unless otherwise indicated.
 2. Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length required to suit applications indicated.
 3. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; removable protective tape on plaster face of control joint.
 4. Expansion Joints: Pair of casing beads with sealant between.
- 2.06 Primer**
- A. Omegaflex primer manufactured by Omega Products International or approved equal.
- 2.07 Finishes**
- A. Omegaflex 100% acrylic-based finish manufactured by Omega Products International, Inc. or approved equal.
 - B. Color and Texture: Color and finish shall match school building.
- 2.08 Mixes**
- A. Portland Cement Plaster: Mix and proportion cement plaster in accordance with ASTM C926.

Part 3. Execution

3.01 Examination

- A. Prior to the application of the portland cement plaster the plastering contractor shall ensure that:
 - 1. Surface and site conditions are ready to receive work.
- B. Substrates:
 - 1. Acceptable substrates and adjacent materials must be dry, clean, and sound. Substrate surface must be flat, free of fins or planar irregularities greater than ¼-inch in 10-feet (6mm in 3m).
- C. Unsatisfactory conditions shall be reported to the District. Do not proceed until all unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.02 Preparation

- A. Substrate: Clean the substrate to which the plaster is to be applied, ensuring that there are no foreign materials present; including, but are not limited to, oil, dirt, dust form release agents, efflorescence, paint, wax, water repellants, moisture, frost, and or extended nails that may rupture the water-resistive barrier.
- B. Surrounding Areas: Protect surfaces near the work of this section from damage, disfiguration, and overspray. Mask off all dissimilar materials.

3.03 Installation, General

- A. General Installation: Refer to ASTM C926, ASTM C1063, and/or the appropriate manufacturer's product data sheet for installation requirements.

3.04 Installing Weather Protection

- A. Water-Resistive Barrier: Apply water-resistive barrier complying with Section 1404.2 of the IBC, Section R703.2 of the IRC or Section 1402.1 of the UBC.
- B. Flashing: Install flashing, trim and weep screeds per manufacturer recommendations.

3.05 Installing Lath

- A. General: Installed per ASTM C1063.

3.06 Installing Portland Cement Plaster

- A. Application Over Metal Lath: Apply per ASTM C926 and C1063. Apply portland cement plaster by hand-troweling or machine-spraying to a nominal thickness of 3/8-inch (9.5mm) scratch coat and to a nominal thickness of 3/8-inch (9.5 mm) brown coat.
- B. Moist Curing: Provide sufficient moisture by fog or moist curing to permit proper hydration of the cementitious materials. The length of time and most effective procedure for curing will depend on climatic and job conditions.

3.07 Installing Finish Coat

- A. General: Apply per manufacturer's product data sheet.
- B. Verification: Verify the desired color and texture match the approved sample and/or mock up prior to installation.

3.08 Cleaning

- A. Cleaning: Remove any and all materials used, overspray from adjacent surfaces, and all protective masking.

3.09 Protection

- A. Protection: Protect applied material from inclement weather until dry and prevent it from freezing for a minimum of 24-hours after set and/or until dry. Refer to manufacturer's product data sheet for additional requirements.

End Of Section

Painting – New and Existing Construction

Part 1. General

1.01 Related Documents

- A. The Drawings and general provisions of the Contract, including General and Special Conditions, apply to the work specified in this section.
- B. Parts 1,2,3,4,5,6, Title 24 of the California Code of Regulations (California Building Code) is to be considered an integral part of this section.
- C. All California Prevailing Wage Laws apply to the work of this section.

1.02 Work Included

- A. The following is a general description of the work included in this section. This description does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of **ALL** work of this Contract.

Item	Description
General	<ul style="list-style-type: none"> Provision and installation of all painted coatings regardless of location on project All preparation, surface cleaning, sanding, filling, de-glossing and priming required.

1.03 Submittals

- A. Provide the following submittals:

Item	Description
Catalog Cuts	<ul style="list-style-type: none"> n/a Submit samples for Architect's review of color and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor. Provide a listing of the materials and application for each coat of each finish sample On 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit each sample as requested until required sheen, color, and texture is achieved Include samples of proposed Tinted Primer Color. Refer PART 2 – Products For Primer Color Requirements Samples shall be created utilizing the same process that will be used in the field. If painting is to be sprayed, then samples shall be sprayed. If painting is to be brushed, then samples shall be brushed. If painting is to be rolled, then samples shall be rolled.
Samples	
Product Data	
Paint Schedule	
Shop Drawings	<ul style="list-style-type: none"> Submit two copies of the manufacturer's MSDS and PDS sheets which will include paint-label analysis and application instructions for each material specified Submit a paint schedule that includes manufacturer and paint system for each type of surface and substrate to be painted. Do not begin work until this schedule is approved by the Architect in writing. n/a

Schedule

- Include Schedule entry and conclusion on Gantt Chart for Installation of all coatings for this project.
- Provide a Schedule of the products to be used on each building component. Include Manufacturer, product, sheen, number of coats and proposed method for installation as well as the intended preparation to successfully install the coating systems.

1.04 References / Standards

- A. The following References and Standards are incorporated into the requirements of this Section as they apply to products, assembly, manufacturing procedures and installation. References shall be utilized in determining "Industry Standards" and other acceptable manufacture and installation methods but shall not relieve the Contractor of any other responsibilities of the Contract. Where conflicts occur between multiple listed references, the Contractor shall assume that the more restrictive standard applies and shall seek determination from the Architect regarding applicable standard.

References

- In addition to compliance with all pertinent codes and regulations, meet or exceed "Standard Type 1", as defined by the Painting and Decorating Contractors of America in the "Modern Guide to Paint Specifications", latest edition
- Meet or exceed requirements of SSPC for all steel surfaces
- MPI – Master Painters Institute, Architectural Painting Specifications Manual <http://www.specifypaint.us>

Standard

- EPA Method 24 – Determination of Volatile Matter Content, water Content, Density, Volume Solids, and Weight Solids of surface coating.
- ASTM E2129, Standard Practice for Data Collection for Sustainability Assessment of Building Products
- ASTM D3960, Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- ASTM D5116, Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products
- ASTM D6670, Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.

1.05 Quality Assurance

- A. Provide the following:

Item

Supervision

Description

- Full time supervision and observation by the Contractor of all on-site Construction Activities including ordering, procurement and delivery of all materials and products manufactured or assembled off-site.
- **Superintendent:** Contractor shall provide knowledgeable personnel – Superintendent or Foreman – familiar with the scope of the Project and capable of communicating the status of the Work on a daily basis to the Architect and at all Required Inspections.

Qualifications of Workers

- General Contractor shall ensure that all workers providing labor on this project are fully competent and experienced in the area of work being performed. All workers will have at least two years of training from the supplying contractor. Documentation will be required.

Product Acceptance

- Use only qualified journeymen painters for the mixing and applications of paint on exposed surfaces; in the acceptance or rejection of installed painting, no allowance will be made for lack of skill.
- General Contractor shall require subcontractors to remove any unqualified workers from the project.
- General Contractor (Superintendent) shall verify and accept all products delivered to site prior to installation.
- Architect reserves the right to reject any material not installed per current industry standards or recommended installation instructions of the Manufacturer, or not installed per these Specifications.

Substrate Acceptance

- General Contractor (Superintendent) shall verify all substrates / conditions prior to allowing installation of any primer, finish system or patching/repair product.
- Inspection: Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Refer Part 3 – Execution for more detailed Contractor Inspection requirements.
- Moisture levels of all surfaces will be tested and documented by the painting contractor and the General Contractor. Additionally, all exposed masonry surfaces will be tested for PH and documented. All PH levels tested will be below: 10 PH before any repair, priming or painting will begin.
- All existing coatings will be tested and verified to be lead free before any work can begin.

1.06 Quality Control by Contractor

- A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract Documents.

Item	Description
Supervision	<ul style="list-style-type: none">• Per Part 1.05
Testing	<ul style="list-style-type: none">• n/a
Special Inspections	<ul style="list-style-type: none">• n/a
Mock Ups	<ul style="list-style-type: none">• Provide mock-up for each color and sheen selection on each building component on the project. Use the same primer, paint, number of coats, and installation method that will be used for the final installation• Coordinate exact location for mock up in field with the Architect• Designated surface shall be the standard of quality for related surfaces upon review and acceptance by Architect.•

1.07 Quality Control by Owner

- A. The following specific procedures shall be required to demonstrate adequate levels of quality provided for project components and systems. Exclusion of any item from this list does not relieve the Contractor of any responsibilities for quality procedures covered elsewhere in the Contract.

Item	Description
Review by Architect	<ul style="list-style-type: none"> Contractor shall notify Architect at the following milestones so that Architect may review the condition of the work. Failure to coordinate these reviews may result in later work being removed for corrections in the earlier work: <ul style="list-style-type: none"> After power washing, cleaning, de-glossing, and preparation of all surfaces to receive paint After completed application of prime coat After application of final coat After final post application site clean-up operations are completed Prior to release of final payment

1.08 Close Out

A. Provide the following Close Out materials:

Item	Description
Product Manuals	<ul style="list-style-type: none"> Maintenance and Operations instructions / manuals provided by all product / material manufacturers.
System Manuals	<ul style="list-style-type: none"> Maintenance and Operations instructions / manuals provided by subcontractors for assemblies / systems.
Surplus Materials	<ul style="list-style-type: none"> Provide (5) gallons of each type and color of paint used on the project
Training	<ul style="list-style-type: none"> n/a

1.09 Warranty

A. Provide written warranty, as follows:

Item	Description
Warranty Form	<ul style="list-style-type: none"> Sub-Contractor and manufacturer to provide warranty against defects in materials or workmanship. Replacement or repair of such defects shall be repaired or replaced in a timely fashion at no additional cost to the Owner.
Warranty Period	<ul style="list-style-type: none"> 3 years
Warranty Start	<ul style="list-style-type: none"> Date of Substantial Completion

1.10 Painting Scope

A. General

- Painting and finishing of exposed items and surfaces throughout the Project, except as herein specified.
- Study Drawings and Schedules and Specifications of other trades and include priming and preparation where no other is specified. Be responsible for total mil thickness of coating systems as specified herein, including others' shop coats
- "Paint", as used herein, means all coating systems materials, including primers, emulsions, enamels, sealers and fillers, stains and other applied materials, whether used as prime, intermediate or finish coats.
- Paint all exposed *paintable* surfaces, whether or not colors are designated in "schedules", except where the natural finish of the material is obviously intended to be exposed and not painted. (Obviously, do not paint window glass, masonry, fire equipment, etc.)
- Paint all wood and steel fences and gates (Excludes steel chain link fences).
- Paint all steel chipping containers identified on plans, including stenciled signage.

B. Colors:

- To match existing adjacent surfaces.

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2. Unless otherwise noted, provide all materials from a single manufacturer.
 3. The contractor shall allow for a range of colors and shall anticipate the possibility of a different color on each type of material included in the project. No limits shall be assumed regarding numbers of colors, including selection of deep tones, except that colors will not be changed within the bound of a given material.
 4. Generally and unless otherwise specified herein or noted on Finish Schedules the quantity of colors and finishes shall be based on the following criteria:
 - (a) Color selection will be based on (1) base color and up to (4) accent colors, which may be deep or bright colors.

C. Existing Construction: Renovated Finish

1. Where existing clear finishes occur on wood surfaces and are scheduled for "Renovated Finishes", provide preparation, surface repair, stripping (where required) and new finishes
2. In some cases, existing finish may be adequate as base for new finish
3. All areas requiring renovated finish will be reviewed in the field with the Architect prior to execution. Areas deemed to be heavily damaged may be re-designated for painted finish at the discretion of the Architect

D. Floor Coatings

1. Refer to other sections of this Project Manual for floors to receive paint, sealer, or similar coatings.

- E. Specific Items Included: The following is intended to clarify items requiring paint. This list does not limit the scope of work shown in the drawings nor does it relieve the Contractor of any responsibility for coordination of all work of this Contract. The general contractor shall make all new surfaces, existing surfaces and repaired surfaces "ready for paint." Once the Painting contractor has applied primer or paint to a surface he/she has assumed complete responsibility for the "readiness" of that substrate.

Interior Paint

- Building walls
- Building posts, columns, and pilasters.
- Acoustical wood panels on walls
- Fire extinguisher cabinets on walls
- Other cabinets on walls
- Lockers, where indicated
- Exposed roof structure members
- Exposed roof decking
- Mechanical system components at ceiling
- Doors
- Steel fence and gates, where indicated
- Metal structure of basketball backstops, where indicated
- Exposed conduit, pipes, and wires

1.11 Painting / Renovation Not Included

- A. The following categories of work are not included as part of the painter-applied finish work, unless otherwise shown or specified. No finish on the following

Do Not Paint:

- Stainless steel and nonferrous metals when used for metal doors and windows, counters, hardware, electrical plates, lighting fixtures, etc.
 - Galvanized surfaces identified per plans to remain unpainted.
 - Soffit vent screens that are currently unpainted
 - Electrical, mechanical, and plumbing equipment and ductwork, except noted electrical conduits, ceiling registers, grilles, and diffusers which shall be field painted over manufacturer's prime coat
 - Acoustical surfaces
 - Fire alarm equipment: Smoke detectors, heat detectors, strobes, horns. Including protective cages or enclosures around such equipment.
 - Factory-finished surfaces, equipment, etc
 - Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, and shafts
 - Existing concrete or masonry surfaces not specifically indicated as to receive paint, including concrete columns and masonry walls. These surfaces are to be renovated per Project Manual Section 09912.
 - Operating Parts and Labels
 - Where necessary to gain access or protect surfaces the painting contractor shall remove and replace at no extra cost removable items such as fittings, awnings, shutters, cover plates, doors and handles.
 - Any surface where a coating will interfere with movement and fit such as threads and hinges
 - Glass, porcelain, plastic, textiles and other materials not suitable to be painted
 - Shop coated, powder coated and baked enamel surfaces
 - School name, logo, or mascot. Unless otherwise noted on the plans, these are to be cleaned and graffiti coated.
- B. Do not paint any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, door closers, sensing devices, motor and fan shafts, unless otherwise indicated.
- C. Do not paint over any code-required labels, such, as UL and, fire ratings, Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.
- D. All masking, tape, paper, and plastic adhered to these items shall be removed by the Painting Contractor upon completion of painting and after required drying time. Absolutely no tape residue will be left on any surface. No tape will remain on an exterior surface for more that (14) days.

Part 2. Products

2.01 Paint

- A. Paint, surface treatments, and finishes are shown in the Finish Schedules, Elevations, or indicated in the Specifications of the Contract Documents. Paint colors will be selected from the manufacturer's mixed colors prior to installation.
 - 1. All surfaces shall receive a paint finish, except the exclusions in 1.10 and 1.11. If no finish is particularly indicated, the finish shall be the minimum coating specified in the paint finish schedule of this Section, for the particular substrate involved. It is the responsibility of the Painting Contractor to verify the exact coating choice, color, and sheen, as it relates to each and every substrate before a coating or primer is applied to any surface.
- B. All paints shall comply with Flame Spread limitations defined in 2010 CBC Table 803.9. Refer to Drawings for specific requirements based on usage.
- C. Final acceptance of colors will be from brush-out samples applied *in situ*.
- D. Proprietary names used to designate colors or materials are not intended to imply that products of the manufacturer's are required to the exclusion of equivalent products of other manufacturer's.
- E. Bids are to be based on specified coatings as manufactured by Benjamin Moore & Co., except as otherwise specified.
- F. Requests for changes or variations must be made in writing by the Contractor to the Architect detailing the reasons, extra cost or savings per hour of labor and/or per gallon of paint. It is the burden of the Painting Contractor to prove the equivalency of any intended substitution of primers or coatings four weeks before beginning the project.
- G. Paint Coordination: Provide finish coats and primers that are compatible and manufactured by the same manufacturer, except as otherwise specified. Review other Sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coating systems for various substrates. Upon request from other trades, furnish information on characteristics of specified finish materials, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify the Architect, in writing, of any anticipated problems using specified coating systems with substrates primed by others.
- H. **Primer:** All primers and undercoats are to be tinted to the approximate shade of the selected finish coat, but the tint shall be sufficiently different to allow easy determination of the boundaries between coats. Where the color schedule calls for the use of deep tones, it is the responsibility of the Painting Contractor to utilize the appropriate Deep Base Primers as Manufactured by Benjamin Moore & Co. (or equal) for use on the surface for which they are intended.

2.02 Surface Repair / Stabilization Materials

- A. Hardener for wood that is damaged, slightly decayed, softened, or weathered:
 - 1. Quick drying, Solvent-borne resin hardener, such as Minwax High Performance Wood Hardener, System 3 End Rot, Abatron Liquid Wood, or approved equal.
- B. Filler for defects in wood.
 - 1. 2-part Epoxy filler such as Minwax High Performance Wood Filler, System 3 Wood Putty, Abatron Wood Filler, or approved equal.
 - 2. 2 component filler such as 3m Bondo or approved equal.

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- C. Metal Etch / rust converter for rusty surfaces:
 - 1. Phosphoric Acid metal etch and prep such as Jasco Prep n' Prime, Ospho Rust Treatment, or approved equal.

2.03 Material Quality

- A. Provide premium quality grade of the various types of coatings as regularly manufactured by approved paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard, premium-grade product will not be acceptable.
- B. Provide undercoat paint (Primer) produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only within recommended limits.

2.04 Materials

- A. Unless otherwise specified, the products indicated under "Painting" are products of "Benjamin Moore & Co.;" comparable-quality products of Dunn-Edwards, ICI, Kelly-Moore, Pratt & Lambert or approved equivalent will be acceptable. Proof of equivalence is required in writing by the Painting Contractor.
- B. Colors used shall be selected for their permanence and non-fading qualities. In addition, colors that are used over concrete and plaster shall not be applied if the concrete or plaster surface has a Ph rating higher than 13.
- C. All paint and coatings must be delivered to the job site in the manufacturer's original and unopened containers, plainly marked with the proper designation of the product, as well as the name of the manufacturer. All coating materials at the job site shall be subject to inspection by the Architect.
- D. The contractor shall retain sufficient quantities of paint of the same batch until completion of the entire project to permit uniform touch-up. Normal minor damages to painted areas by other trades during the course of the construction project shall be touched-up by the Painting Contractor at no extra cost.
- E. It is to be understood by the General Contractor and the Painting Contractor that all coatings must conform to all state and local regulations including VOC rules at the time of application.

Part 3. Execution

3.01 Contractor's Inspection

- A. It is the General Contractor and Painting Contractors responsibility to examine the areas and conditions under which painting work is to be applied. Notify the Architect, in writing, of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected and inspected by the Architect.
- B. All surfaces to be painted must be free of dirt, rust, scale, grease, moisture, scuffed surfaces, glossy, or conditions otherwise detrimental to the formation of a durable paint film.
- C. Any surface which has been primed or painted constitutes acceptance of the surfaces and the conditions within any particular area.
- D. Surfaces not being painted shall be protected from drips, spatter, over-spray and other paint contamination by means of masking, drop sheets and protective covers.

3.02 Surface Preparation

- A. General: Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's instruction and as herein specified for each particular substrate condition.
 - 1. The Painting Contractor shall be wholly responsible for the quality of his work, and is not to commence any part of it until the surface is in proper condition.
 - 2. If the Painting Contractor considers a surface unsuitable for proper finishing, he shall notify the Architect in writing. The Painting Contractor is not to apply any material until corrective measures have been taken, or the Architect has instructed them to proceed.
 - 3. If the Painting Contractor has been instructed by the General Contractor to begin painting under conditions and circumstances he believes could result in poor performance and early failure of the coating, he shall immediately inform the Architect in writing and request from the Architect for a decision in writing.
- B. General, Existing Construction:
 - 1. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.
 - 2. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease or waxes prior to mechanical cleaning. Schedule the cleaning and painting so that containments from the cleaning process will not fall onto wet, or newly painted surfaces.
 - 3. Refer to the manufacture's Technical Data Sheet for specified product and comply with the requirements regarding application such as: mixing of the components, thinning, pot life, and application equipment such as: roller type and nap length, brush type, tip size and gun type, air and fluid pressure, hose length and hose I.D., etc.
 - 4. Ensure that expectations of humidity, precipitation and temperature (substrate, ambient and material) during application and curing of paints are within the range permitted by the manufacturer.
 - 5. When substrate temperatures are high, care must be taken while applying the paint to prevent formation of voids, pinholes, and bubbles due to the rapid evaporation of solvent.
- C. Wood:
 - 1. Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, solvent, and sandpaper, as required. Sand smooth all finished surfaces and remove dust. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac other approved sealer before application of the priming coat multiple thin coats of white shellac may be necessary to "seal" the knot from "bleeding". After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dried. Spot prime over all exposed fillers. Preapproval from the Architect in writing is required before any wood surfaces can be pressure washed. **All wood surfaces that are intended to be power washed will need to be identified and agreed upon in advance by the painting contractor, Architect and General Contractor.**

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2. Repair of defects, decay, and stabilization of soft areas: On all wood not identified to be replaced, all imperfections, divots, soft and weathered wood, and minor damaged areas shall be repaired before painting. All end grain shall be treated with wood hardener prior to repair and painting. All "butt" joints will be caulked with a Urethane base caulking to ensure a flexible joint to allow for the lateral expansion and contraction of the joint. The repair areas shall blend seamlessly into the surrounding surface.
 - a. Scrape and remove all loose material from the damaged area.
 - b. Treat the area with wood hardener per manufacturer's instructions
 - c. Fill with epoxy filler. Multiple coats may be required
 - d. Sand smooth and blend into surrounding area. Inspect and apply additional filler if required.
 - e. Spot prime over patched and repaired surfaces.
 3. Fill all cracks, joints, seams with caulk and allow to cure (see caulking manufacturer recommendations as it pertains to "cure: times).
 4. Multiple coats of paint that are in an advanced state of deterioration and prior applications of cement-based paints must be removed by scraping, sanding or by the use of mechanical grinder. These areas will be referenced by the Architect and General Contractor during the "walk through".
 5. New Wood must be dry, free of grease, oil mildew, mortar and asphalt spatters and mill glaze. Rough surfaces are to be sanded smooth. Cracks are to be caulked ; door and window trim and joints are to be caulked after surfaces have been primed so as to create a "sandwich" effect between the caulking/putty and the primed substrate. Nail holes are not to be filled. Painting is not to be done during or immediately following foggy, rainy or frosty weather, nor when the temperature is expected to go below 50°F before the coating has dried. Avoid painting surfaces while they are exposed directly to the hot sun, and refrain from painting during windy or threatening weather. Pressure treated wood (PTW) must be tested prior to coating to determine proper penetration of coating. Surface must be sprinkled with water to determine absorption into substrate. If water drops remain on PTW surface, do not paint. If water penetrates immediately into the surface, prepare surface as you would any wood and then prime. Smooth planed clapboards or siding must be sanded thoroughly with 80 grit sandpaper to remove the "mill glaze" to allow proper penetration and adhesion of the paint coating. If mildew is evident, it must be removed by scrubbing with a commercial mildew wash formulated for this purpose. Caution: Follow manufacturer's directions; wear rubber gloves, work goggles and protective clothing.
 - (a) All timber delivered to the job site shall be tested with a moisture meter. All wood testing at or below 18% moisture content shall be immediately primed.
 - (b) Prime edges, ends, face, undersides, and backsides of such wood surfaces. When transparent finish is required, use spar varnish for back priming.
 - (c) Timber surfaces to be embedded in plaster or masonry shall be fully primed prior to installation. All timber end grain is to receive one extra primer coat.
 - (d) Back prime all new exterior wood.
 - (e) If more than (14) days have expired since the time of original priming all surfaces to be top- coated shall be lightly sanded or re-primed before a finish coat can be applied.

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6. Previously Painted Wood must have all blistered, peeling, scaling and deteriorating paint removed to a clean, sound substrate, by scraping, grinding, sanding and/or wire brushing. Spot prime where bare wood is exposed. Chalk must be thoroughly removed to a sound substrate by wire brushing, sanding or by power washing. Remove all loose or split caulking, putty or glazing
 7. Previously stained exterior wood:
 - (a) After ensuring that wood is dry, free of grease, oil mildew, mortar and asphalt spatters and mill glaze, sand with 80 grit sand paper to achieve an adequate profile for complete primer adhesion.
 - (b) Prime with a stain blocking acrylic primer.
- D. New Exterior Cement Plaster:
1. Surfaces are to be dry, free of greasy residue, mortar and asphalt spatters. Thoroughly brush with a stiff fiber brush to remove loose particles.
 2. Remove form release agents with appropriate solvents.
 3. Remove laitance deposits by hand or power wire brushing, or other appropriate means.
 4. Allow poured concrete and precast concrete to cure for 60-90 days; block and stucco surfaces 30-60 days. Fill all structural cracks and crevices with the appropriate caulking/patching compound. If efflorescence is present, first dampen the surface with water, and then scrub the surface with a 10% solution of muriatic acid. Caution: Wear rubber boots and gloves, work goggles, and protective clothing. After treatment, thoroughly flush the surface with clean water to remove all acid and allow to dry thoroughly before painting. If mildew is evident, it must be removed by scrubbing with a commercial mildew wash formulated for this purpose. Caution: Follow manufacturer's directions; use rubber gloves, work goggles and wear protective clothing.
- E. Previously painted Exterior Cement Plaster:
1. Remove all peeling, scaling and deteriorating paint and chalk to a sound substrate by hand scraping, use of mechanical grinders or high-pressure washing. Fill all structural cracks and crevices with the appropriate caulking/patching compound. If mildew is present, remove by scrubbing with a commercial mildewcide wash formulated for this purpose.
 2. Caution: Follow manufacturer's directions; wear rubber gloves, work goggles, and wear protective clothing.
- F. Ferrous Metals:
1. Thoroughly clean New steel surfaces to remove all grease in accordance with SSPC-SP1 "Solvent Cleaning"
 2. Remove rust, mill scale, etc., in accordance with SSPC-SP2-63 "Hand Tool Cleaning" or SSPC-SP3-63 "Power Tool Cleaning". Particular care is to be exercised to remove welding flux, slag and fume deposits as is possible by blast cleaning, washing with water, Phosphate rinsing, or power tool cleaning. Weld Spatters and burs must be removed. Primer coats should be applied immediately after the surface is dry and within the same day as the acid wash was applied so that rust does not reappear do to overnight moisture. Factory applied "shop coat" primers must be re-primed with a rust inhibitive 2 component epoxy primer before finish coats are applied.
- G. Previously painted steel:
1. Thoroughly clean following SSPC-SP1-63 to remove all grease, oil and dirt.
 2. All loose, peeling and scaling paint is to be removed by hand scraping or power tool cleaning. Rusted surfaces should be cleaned in accordance with SSPC-SP2_63" Hand Tool Cleaning" or SSPC-SP3-63 "Power Tool Cleaning".

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3. Surfaces are to be thoroughly cleaned after sanding, scraping, hand and tool cleaning, etc. Dull all glossy surfaces by sanding.
 4. Removal of multiple coats of paint that are in an advanced state of deterioration shall be accomplished by sandblasting or by the use of a mechanical grinder.
- H. New galvanized metals:
1. Thoroughly clean to remove all grease, oil dirt and contaminants in accordance with SSPC-SP1 "Solvent Cleaning".
- I. Metal Downspouts and Structural Posts:
1. Remove all foreign material including but not limited to tape and previous painted coatings that are flaking or chipped.
 2. All existing paint shall be removed completely down to bare metal prior to installation of new primer and paint. All rust areas shall be sanded smooth and treated with metal etch / rust converter.
- J. Weathered previously painted galvanized metal:
1. Remove all peeling and scaling paint, rust and chalk by scraping, sanding and wire brushing.
 2. After scraping, sanding, and wire brushing thoroughly clean the surface, re-prime exposed metal with a 95% zinc primer by Rustoleum or other pre-approved manufacturer, and finish as specified.
- K. Painting of special assemblies
1. Existing louvers, vents, and screens:
 - a. Clean all sides of all fixed and operating louvers. Clean all aluminum frames of louvers, if existing.
 - b. Remove screens on the exterior of louvers, if equipped, and strip down to bare metal as specified by the Architect.**
 - c. Clean all excess paint from operable louvers if interfering with their operation. Clean all chains, gears, and all moving parts.
 - d. Paint louvers and screens separately and reassemble when dry.
 2. Doors and frames
 - a. Remove all paint if it will interfere with adhesion of the new coating system.
 - b. Fill all dents, holes, and other surface imperfections with epoxy filler.
 - c. Sand smooth all chipped areas and apply several coats of primer to build up the surface until smooth.
 - d. Finish coats of paint shall be sprayed or brushed. NOT ROLLED. Rolled-on paint or any paint applied otherwise with a rough or "stippled/orange peeled" final texture will be rejected.
 - e. Carefully paint doors which will touch adjoining surfaces when closed. To prevent blocking (fusing of uncured coating), the doors are not to be closed until the coating is cured enough as to not allow the door and jam to fuse together. Where excessive coating film thickness impacts the operation, previous paint and excess

film thickness shall be removed by sanding, grinding or stripping and the item repainted.

3. Wood Windows

- a. Refer to section 08 81 10 Glass and Glazing for glass replacement and glazing compound spot repair.
- b. Carefully paint operable wood windows which will touch adjoining surfaces when closed. To prevent blocking (fusing of uncured coating), the windows are not to be closed until the coating is cured enough as to not allow the door and jam to fuse together. Where excessive coating film thickness prevents windows from closing, previous paint and excess film thickness shall be removed and the item repainted.

4. Lockers – as indicated on plans

- a. Thoroughly clean all lockers, remove all stickers and other foreign matter.
- b. Repair minor dents and surface imperfections with a 2 component plastic filler.
- c. Remove all staples, tacks, and other foreign items from the wood end caps at the ends of the banks. Fill all imperfections with epoxy and sand smooth.
- d. Mask all hardware and tags on the door faces before painting.
- e. Lockers shall be painted by airless, conventional or HVLP sprayer.

3.03 Materials Preparation

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue. Store materials not in actual use out of the direct sun at all times.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during the application of the materials. Do not stir surface film into the material. Remove the film, and if necessary, strain the material before using.

3.04 Application

- A. General:
 - 1. See Operations and Sequence section below for the definition of a "Coat" of paint or finish.
 - 2. Apply paint in accordance with the Manufacturer's directions paying particular attention to recommended square feet per gallon. Use applicators and techniques best suited for the type of material being applied and that will provide a smooth professional, brush mark free finished surface.
 - 3. Apply additional coats when undercoats, stains, or other conditions show through the final coat of paint, until the paint film is of uniform finish, color, and appearance.
 - 4. Paint surfaces behind moveable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only. **Re-set all moveable equipment or furnishings in their original location upon completion and inspection by Architect.**
 - 5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 - 6. Paint the backside of access panels and removable or hinged covers to match the exposed surfaces in the coating specified for the substrate.
 - 7. Finish exterior doors on tops, bottoms, and side edges the same as the exterior faces, unless otherwise indicated.

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8. Sand lightly between each succeeding enamel or varnish coat and remove all sanding dust before work commences.
 9. No spraying to be done without prior written approval of the Architect or Owner.
- B. Minimum Coating Thickness
1. Provide a total dry-film thickness as recommended by manufacturer, but not less than 4.5 mils for the entire coating system of prime the finish coat for three-coat work.
 2. Prime Coats: Apply a prime coat to material which is required to be painted, and which has not been prime-coated by others.
 3. Re-coat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn through or other defects due to insufficient sealing.
 4. 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.
 5. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections are not acceptable and shall be repaired and re-painted.
 6. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Always apply the first two coats in gloss and the final coat in the referenced final finish sheen. Provide a finish free of laps, cloudiness, color, irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
 - (a) Provide finish for final coats, unless other- wise indicated.(Unnecessary)

3.05 Clear Finish Renovation

- A. Repairs
1. Do not begin finish renovation until all repairs have been made. Repairs may include patching, insertion of new panels or wood parts and spot wood repair.
- B. Preparation:
1. Do not accept substrates in which panels, trims or other materials are loose, bowed or otherwise not in full contact with substrate.
 2. Fill all nail holes and small cracks with permanent hardening putty to match final finish.
Do NOT fill originally existing joints between panels.
 3. Sand after putty has hardened to remove all residues and produce a smooth finish.
 4. Light sand all wood surfaces prior to application of first coat. Sanding shall knock down all previous stubble and residue from previous finishes.
 5. Clean with tack cloth to remove sanding dust.
 6. Fully clean area and ensure that dust will not become airborne from movement of or air infiltration.
- C. Application
1. Apply gloss clear finish with high quality brush or spray. Stroke parallel to grain and pull stroke full length to avoid brush ends and runs.
 2. After first coat is dry, and per manufacturer specification, light sand completed finish to knock down all stubble, dust and residue.
 3. Apply second coat of clear gloss fully covering all areas applied by the first coat. Allow to dry and inspect.
 4. All areas that remain rough, or stubbled or include dust shall be sanded, cleaned and final coated again with the referenced final sheen.

3.06 Operations and Sequence

- A. All work is conditioned on adequate coating and finishing of all visible surfaces. Contractor shall provide all equipment necessary to meet this requirement. Equipment shall include lifts, scaffolding, ladders and any other appurtenances required to access surfaces.
- B. Sequence of operations shall be determined by the requirements of the paint manufacturer and the finish requirements of this specification. Finish quality shall not be compromised by limitations resulting from equipment movement or setup.
- C. Multiple setups may be required to apply different coatings or colors.
- D. Multiple passes at each surface will be required to allow for multiple coatings and interim curing time. Contractor shall allow for as many passes as necessary to adequately coat each surface.
- E. Contractor shall allow for multiple passes where the requirements of one finish component are different than those of another.
- F. **Drying Time between coats:** Time between coats of primer and finish coats shall be dictated by the Required Inspections (refer to PART 1.) Each coat shall be allowed to dry completely before application of next coat.
 - 1. **"Coat"** shall constitute a complete covering of any surface according to mfr. instructions for application of the particular coating specified and shall include manufacturer's specified drying time between coats. If mfr. specified curing time has not accrued prior to a subsequent coat, then the subsequent coat shall be considered a part of the previous coat and shall not constitute a required coat per these specifications. Multiple passes of any application device used for any coating shall not be considered multiple coats.

3.07 Cleanup and Protection

- A. Cleanup:
 - 1. During the progress of the work, remove from the Project daily all discarded paint materials, rubbish, cans, and rags.
 - (a) Comply with local regulations for disposal of all paint materials including paint, stain, wood preservative finishes, solvents, and other related materials.
 - (b) Recycle paint as available in jurisdiction. Separate materials by type. Where paint recycling is not available, materials shall be treated as hazardous waste and disposed in an appropriate manner.
 - 2. Upon completion of painting work, clean all window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damaged finished surfaces. Cut and face all operating windows. All operable windows need to be shown to work correctly to the Architect before the project will be considered complete.
- B. Protections: Protect the work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damages by cleaning, repairing, or replacing and repainting as directed by Architect.
 - 1. Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.08 Product Delivery, Handling and Storage

- A. Delivery all materials to the job site in original, new, and unopened packages and containers bearing manufacturer's name and label.

3.09 Job Conditions

- A. Do not apply water-base paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 50 degrees F., unless otherwise permitted by the paint manufacturer's printed instructions.
- B. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45 degrees F., unless otherwise permitted by the paint manufacturer's printed instructions.
- C. Do not apply paint in snow, rain, fog, or mist or when the relative humidity exceeds 85% or to damp or wet surfaces, unless permitted by the paint manufacturer's printed instructions. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying period.

Part 4. Coating Systems**4.01 Materials**

- A. For purposes of scheduling, the products indicated under Painting Systems are products of Benjamin Moore & Co.
- B. Products used shall be selected for their permanence and non-fading qualities.
- C. Colors and Finishes: Paint colors, surfaces treatments, and finishes are shown on the Drawings and indicated in the Schedules of the Contract Documents.
- D. Use only vinyl acrylic or 100% acrylic paint; no oil (alkyd) based paints are allowed unless otherwise specified.

4.02 Paint Schedule

- A. This schedule is comprehensive, there may be items listed here that are not within the scope of this project.

End of Section

Graffiti Barrier

Part 1. General

1.01 Scope

- A. Furnish and apply graffiti barrier and brick masonry restoration work as specified.

- 1. Cleaning of brick surface.

- B. Related work specified elsewhere:

- 1. Site Concrete - Section 03 30 00
 - 2. Metal and Hardware - Section 05 50 00
 - 3. Portland Cement Plaster- Section 09 24 00

1.02 Standards

- A. The graffiti barrier and brick masonry restoration manufacturer's standard specifications will be considered as the minimum standard for the work.

1.03 Submittals

- A. Submit type of product proposed for use with technical data sheet. After review by the District's Representative and Landscape Architect, no deviation from the product will be permitted without further approval.

1.04 Delivery, Storage & Handling

- A. Special care shall be taken in the handling of graffiti barrier and brick restoration materials to prevent spillage and fire. Remove rags, waste, and empty containers from the site at the end of each work day.

Part 2. Products

2.01 Materials

- A. Graffiti Barrier:
 - 1. Vertical surfaces: Shall be Prosoco Blok-Guard & Graffiti Control II, Item #40193, or approved equal. Available through Lowry's Inc., 23030 Kidder St., Hayward, CA 94545, (800) 252-2449.
 - 2. Horizontal surfaces: Shall be Prosoco SLX100 Water & Oil Repellent, Item #55055, or approved equal. Available through Lowry's Inc., 23030 Kidder St., Hayward, CA 94545, (800) 252-2449.

Part 3. Execution

3.01 Preparation

- 1. Take special care to prevent spilling graffiti barrier and graffiti removal materials on surfaces not intended to receive them.

3.02 Application

- A. Surfaces to receive graffiti barrier coating. – Barrier

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1. All concrete, pavers, walls, masonry, signage, and site furnishings including but not limited to the following shall receive a coating of graffiti barrier:

- (a) All concrete paving
- (b) All concrete bands
- (c) All seatwalls
- (d) All interlocking pavers
- (e) Hand rails
- (f) Concrete stairs
- (g) Metal lettering
- (h) Signage
- (i) Benches
- (j) Display cabinets
- (k) Light fixtures
- (l) All existing and new brick work within the project area.

- B. Apply all products in strict accordance with manufacturer's recommendations.
- C. Wherever complete and satisfactory coverage is not obtained, the Contractor shall apply additional coats at no expense to the District.

3.03 Cleaning

- A. Take special care to keep surrounding surfaces clean as the work progresses.

End of Section

Mechanical Common Work

Part 1. General

1.01 Section Includes

- A. General Requirements
- B. Submittals
- C. Miscellaneous Steel, Bolts, Nuts, and Washers
- D. Concrete Anchors
- E. Pipe and Pipe Supports
- F. Seismic Restraints
- G. Fire rated Pipe Penetrations
- H. Wall Penetrations
- I. Accessibility requirements

1.02 General Requirements

- A. Related Documents: Drawings and general provisions of Contract, including General Conditions and Supplementary General Conditions and Division 1, apply to work of this Section.
- B. Other Sections of the Specification, as listed in Table of Contents, are included in and made a part of this Section. Consult these Sections to determine extent and character of related work of other Sections and provide proper coordination of work specified herein with that specified elsewhere to produce a completely finished and fully operable installation. This Section applies to other Sections of Division 23.
- C. Provide complete and fully operational systems with facilities and services to meet requirements indicated and in accord with applicable codes and ordinances.
- D. Drawings indicate general arrangement and location of piping and equipment. Do not scale drawings for exact location of items. Should it be necessary to deviate from arrangement or locations indicated in order to meet architectural, structural, electrical or site conditions, or due to interference with other work, deviations such as offsets, risers and drops in piping that may be necessary, where shown or not, shall be made at no additional cost to the Owner. Extreme accuracy of the data given herein and on the Drawings is not guaranteed. The Drawings and Specifications are for the assistance and guidance of this Section and exact locations, distances, and elevations will be governed by actual site conditions.
- E. Construction documents have been designed to meet or exceed minimum requirements of Codes; therefore, unless before signing Contract, Contractor has notified Owner's Representative, in writing, of any items in conflict with said codes, Contractor shall thereafter make any minor adjustments necessary to meet said Codes at no cost to Owner.
- F. Visit site of work, take measurements, examine existing areas where work is to be performed and get such other information as necessary for proper execution of work. Ascertain and check conditions with Drawings and Specifications, other trades, existing conditions and determine the means by which work will be performed. No allowance shall subsequently be made for any extra expense due to failure or neglect to make such examination and correlation. Where revisions or changes are required to permit installation of new work, they shall be made at no additional cost to the Owner. No allowance shall be subsequently made for any error or omission on part of Contractor in this connection.

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- G. Manufacturer's Directions: Follow manufacturer's directions covering points not shown on drawings or specified herein. Manufacturer's directions do not take precedence over drawings and specifications. Where these are in conflict with drawings and specifications, notify Architect for clarifications, before installing the work.
 - H. Codes: Work and materials shall be in full accordance with applicable local and State codes and ordinances. Whenever drawings and specifications require larger sizes or higher standards than are required by regulations, drawings and specifications govern. Whenever drawings and specifications require something which will violate regulations, regulations govern. No extra charge will be paid for furnishing items required by regulations but not specified or shown on drawings
 - I. Examine Drawings and other Sections of Specifications for requirements therein affecting work of this trade. Contractor shall coordinate work with that of other trades to avoid interference. Plans are diagrammatic and show generally locations of equipment, and piping and are not to be scaled; dimensions and existing conditions shall be determined at building.
 - J. Every effort has been made in design to meet or exceed minimum requirements of Codes; therefore, unless before signing Contract, Contractor have notified Architect, in writing, of any items in conflict with said codes, Contractor shall thereafter make any minor adjustments necessary to meet said Codes at no cost to Owner
 - K. Intent of specifications: Work not explicit in Specifications or Drawings, but clearly implied as necessary to complete systems, shall be included as though fully specified and drawn
 - L. Interruption of electrical services or existing mechanical systems shall be scheduled at least 24 hours in advance and only at times approved by Owner. Contractor shall minimize such interruptions by carefully planning work and by using existing shutoff valves when making connections to existing systems.

1.03 Submittals

- A. Provide submittals in accordance with provisions of Division 1.
- B. Material Lists: submit lists of material, equipment, and apparatus intended for use, identifying manufacturer's name and type and/or model number.
- C. Description: submit complete descriptions of material, equipment, and apparatus intended for use. Include manufacturer's names, trade names, model numbers, sizes, capacities, operating weights, and other data necessary for complete and prompt identification and review. Refer to Specification page, Drawing, or both wherein the material or equipment is specified, scheduled, or otherwise indicated. Include statement that equipment or apparatus submitted complies with applicable standards specified.
- D. Shop Drawings: Submit manufacturer's Certified Shop Drawings for equipment. Include manufacturer's names, trade names, model numbers, sizes, capacities, operating weights, and other data necessary for complete and prompt identification and review. Clearly mark submittals to show actual items proposed for installation.
- E. Record "As-built" Drawings:
 - 1. Provide and keep up-to-date a complete "as-built" record set of prints. Mark up these drawings daily to show every change from original drawings and specifications. Show exact "as-built" locations, sizes and kinds of equipment. Keep these drawings on job site and use only for record set.
 - 2. Upon completion of work, obtain complete set of AutoCAD drawings from Owner's Representative. Transfer neatly, using competent draftsman, changes entered on the above "red lined" set. Submit to Owner's Representative for approval. Comply with Operations and Maintenance Manuals specification sections.
- F. Maintenance and Operating Instructions:

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1. Furnish operating instructions, maintenance instruction, parts lists, and other bulletins and brochures pertinent to operation and maintenance of major equipment provided, in accordance with Operations and Maintenance Manuals specification sections.
 2. Properly instruct Owner's personnel in operation and maintenance of material, equipment and apparatus provided.
- G. Written guarantees in accordance with Specification Section on Warranties. Submit written guarantee that work has been performed in accordance with Drawings and Specifications and that Contractor shall replace or repair, to satisfaction of Owner and tenant, any portion of work that fails within a period of one year after final acceptance, provided that such failure is due to defects in material or workmanship.

1.04 Fees and Permits

- A. Procure and pay for licenses and permits, and pay fees, deposits, assessments and tax charges required to perform installation of material, equipment, and systems herein specified and indicated.

1.05 Material Delivery, Storage and Handling

- A. Deliver materials in timely manner to insure uninterrupted progress of work. Manufactured materials shall be delivered in unopened original containers with brand and maker's name marked thereon. Materials in broken containers or showing evidence of damage will be rejected and must be immediately removed from site.
- B. Store materials, immediately upon receipt, at location designated by Owner so as to preclude damage thereto and permit ready access for identification and inspection of each shipment.

Part 2. Materials and Products

2.01 General

- A. Material, equipment, and apparatus hereinafter specified shall be new, unless specifically noted otherwise. Material, equipment, and apparatus may be taken from stock, but submittal shall include manufacturer's identification and statement indicating conformance with specified Codes, Regulations, Standards, referenced Specifications, and requirements specified herein. Material, equipment and apparatus shall be identified by manufacturer's name, nameplate and pertinent data.
- B. Electrical material, equipment, and apparatus specified herein, shall conform to requirements of NEC

2.02 Miscellaneous Steel, Bolts, Nuts and Washers

- A. Miscellaneous steel angles, channels, brackets, rods, clamps, etc., shall be of new materials conforming to ASTM A36. Steel parts exposed to weather or where noted shall be stainless steel or hot dipped galvanized after fabrications.
- B. Bolts and nuts, except as otherwise specified, shall conform to ASTM "Standard Specifications for Low Carbon Steel Externally and Internally Threaded Standard Fasteners", Designation A307. Bolts shall have heavy hexagon heads, and nuts shall be of hexagon heavy series. Bolts, washers, nuts, anchor bolts, screws and other hardware, located outdoors or in air intake plenums shall be hot-dipped galvanized, or stainless steel, and galvanized nuts shall have a free running fit. Cadmium plated not acceptable in these locations. Bolts shall be of ample size and strength for purpose intended.

2.03 Concrete Anchors

- A. Hilti, B-Line, Mason Industries, or equal, wedge anchors, U.L. Listed. Powder actuated devices are not permitted.

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- B. Maximum loading on inserts and rods shall not exceed 75 percent of rating.

2.04 Seismic Restraints

- A. Anchorage and seismic restraint of permanent equipment and associated systems shall be installed to comply with Section 1616A of the 2016 California Building Code. See drawings for additional information.

2.05 Fire-rated Pipe Penetrations

- A. Provide State Fire Marshall approved assemblies at penetrations of floors, fire-rated walls and partitions, and smoke-rated walls and partitions. Fill annular space with UL listed incombustible intumescent putty. Seal both sides of penetrations at walls and floor slabs with incombustible sealant.
- B. Piping penetrating floors, fire-rated walls and partitions, and smoke-rated walls and partitions shall be metallic.

2.06 Wall Penetrations

- A. Provide metal sleeves where pipes pass through walls, partitions, floors, ceilings or structural members unless otherwise noted.
- B. Sleeves in Plaster Walls and Partitions: 18-gauge galvanized sheet steel, both ends flush with finished surface. Pack with mineral fiber and caulk, or per "Fire-Rated Pipe penetration" where required.
- C. Clearance: Size sleeves and core drilled holes to provide 1/2" minimum annular clearance around pipe.
- D. Plates: Hinged, or chromium plated steel with spring and snap.

Part 3. Execution

3.01 Installation

- A. Provide miscellaneous equipment and supplies, at no additional cost to Owner, if required to make systems operable as specified or shown in Drawings.
- B. Connect Mechanical systems to existing utilities where applicable.
- C. Store, protect, uncrate, hoist, and set into place equipment and material.
- D. Provide carpentry, steel fabrication, and backings involved in making stands and supports required for equipment, where such supports are not specified in work of other Sections.
- E. Building will be in use while work of this Contract is in progress. Contractor shall be responsible for Owner's equipment, furnishings and materials of any condition. Contractor shall be responsible for moving and storing Owner's equipment, furnishings and materials as required to perform work of this Contract. Damage to any of Owner's equipment, furnishings and materials shall be repaired or replaced to Owner's satisfaction. This paragraph includes Owner's equipment, furnishings and materials stored in buildings, mechanical spaces and in crawl spaces under buildings
- F. Provide material, equipment and systems indicated on Drawings, but not mentioned in this Division, and vice versa, as though specifically indicated by both Specifications and Drawings. Install material, equipment, and systems generally as indicated. However, accomplish minor changes as directed by Owner's Representative in order to accommodate installation of other material, equipment, and systems without additional expense to Owner.
- G. Do not permit or cause any work to be covered or enclosed until it has been inspected, tested, and approved. Should any work be enclosed or covered before such inspection and test, uncover work and after it has been inspected, tested and approved, make repairs with such materials as may be required to restore this work and that of other Sections to its original and proper condition.

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- H. Properly adjust, repair, or replace any equipment producing objectionable noise or vibration in any occupied areas of building, including providing additional brackets, bracing, vibration isolators, etc., to prevent objectionable noise or vibration from equipment installed under this Division.
 - I. Protect materials, equipment, and apparatus, both in storage and after installation, until date of acceptance by Owner. Provide temporary storage facilities for material and equipment as necessary. Material, equipment, or apparatus damaged because of improper storage or protection will be rejected, removed from site and replaced at no additional cost to Owner with new, duplicate, material, equipment, or apparatus.
 - J. Repair damage to premises due to poor workmanship, defective material or equipment. Restore premises to their condition prior to damage and provide new material, equipment or apparatus to replace that damaged. Included is restoration of damage caused by leaks and system failures. Work and material used shall be at no additional cost to Owner.
 - K. Coordinate height of accessible fixtures with those indicated in construction drawings.
 - L. Interruption of electrical services or existing plumbing systems shall be scheduled at least 24 hours in advance and only at times approved by Owner's Representative. Contractor shall minimize such interruptions by carefully planning work and by using existing shutoff valves when making connections to existing systems.

3.02 Coordination and Clearance

- A. Installations depicted on Drawings are, in many locations, designed to fit tightly into work under other Divisions, that is, without any remaining clearance between work under this Division and work under other Divisions. Completely coordinate work with other Divisions so that lines, grades, slopes and vertical and horizontal location of pipes, invert elevations, equipment, and ducts shall be exactly determined in field and cleared with other Divisions before installation of these items is begun. No extra compensation will be made for failure to observe this clause. Piping and equipment shall be installed allowing for work of other Divisions both above and below work of this Division.
- B. Piping and ductwork shall be concealed in ceilings, furred walls, partitions and pipe spaces except where specifically noted otherwise.
- C. Adequate clearance for protection of equipment, access to operable devices, automatic devices, and for access to lubrication points shall be maintained. Provide minimum 18-inch clear passageway. Unless otherwise shown, piping shall be installed as high as possible to provide maximum headroom.
- D. Schedule work in advance and avoid delays and interferences. Conform to construction schedule and make installation when and where directed.

3.03 Accuracy of Data

- A. General arrangement and location of ductwork, piping, apparatus, etc., is shown on Drawings. Minor changes may be necessary to accommodate other work. Should it be necessary to deviate from arrangement or location indicated due to interference with new and/or existing work, make such deviations, such as offsets in piping and ducts that may be necessary, whether shown or not, without extra expense to Owner.

3.04 Painting

- A. Factory finished equipment shall be primed and painted with two coats of semi-gloss enamel, unless specified otherwise, color of finish coat as selected by Owner.
- B. Other painting required for the work, such as patching, shall be provided as required under this Section.

3.05 Installation Workmanship

- A. Workmanship shall be of highest standards of the trades and shall result in a neat, clean, orderly and coordinated installation according to latest practices and consistent with

intent of these Contract Documents. Entire installation shall be accomplished by personnel especially trained and qualified in their respective trades.

- B. Install material, equipment, and apparatus with like elements and appurtenances in similar location, position, and elevation. Do not install any diagonal or otherwise irregular work without written approval from Owner.
- C. Should any part of installation result in an incomplete or inoperable system, or systems, provide additional material or equipment necessary to complete installation as required.
- D. Install material, equipment, and apparatus entirely out of way of lighting fixtures, doors, and other interferences.
- E. Inspect material, equipment, and apparatus upon delivery and do not install any that may be subject to rejection as a result of damage or other defect and do not install any that are damaged or otherwise defective.
- F. Advise Owner, in writing, in event a conflict occurs in location or connection of equipment. Assume all costs for relocation of equipment resulting from failure to properly coordinate installation.
- G. Following review of submittals, rough-in for material, equipment and apparatus. Rectify any installation resulting from failure to properly rough-in for equipment.
- H. Hangers and Supports
 - 1. Securely fasten ductwork to building construction by means of hangers, supports, guides, anchors, and sway braces to maintain pipe alignment, to prevent sagging, and to prevent noise and excessive strain on ductwork due to movement under operating conditions. Additionally, anchor and support lines subject to expansion and contraction as necessary to control excessive movement.
 - 2. Ductwork support systems shall comply with requirements of 2016 California Building Codes.
 - 3. Ductwork shall be level and properly supported, unless otherwise noted on the drawings.
 - 4. Do not support ductwork from fans or other equipment.
 - 5. Do not use wire, plumbers' tape or other make-shift devices for hangers.
 - 6. Do not burn or weld any structural member without approval of Owner's Representative.

3.06 Identification

- A. Signs and Labels
 - 1. Fasten a red-headed tack to each T-bar suspended ceiling pushout tile at valves, control devices, etc.
- B. Pipe Identification
 - 1. Identify and color-code all piping including piping in furred ceiling spaces. Provide directional arrows on circulating systems. Identification shall be in accordance with ANSI A13.1-2007, Scheme for Identification of Piping Systems (OSHA) and as specified herein.
 - 2. Plastic Markers: Seton "Setmark" Snap-Around Pipe Marker, Brady or approved equal. Each marker must show approved color-coded background, proper color of legend in relation to background color, approved legend letter size, approved marker length.
 - 3. Signs and Labels:
 - a. Install signs in accordance with manufacturer's recommendations and installation instructions, free from distortions and defects.
 - b. A printed sign shall be posted at each automatically started equipment stating, "WARNING THIS MACHINE IS AUTOMATICALLY CONTROLLED AND MAY START AT ANY TIME".
- C. Equipment Identification

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1. Properly identify each piece of equipment and its controls using engraved laminated plastic descriptive nameplates, attached to equipment and controls using round head brass machine screws, pop rivets or contact cement. Cardholders in any form not acceptable.

3.07 Testing

- A. Provide tests specified hereinafter and as otherwise directed by Engineer. Provide test equipment including test pumps, gauges, instruments, etc. Pressure gauges used shall be graduated in increments not greater than 5 pounds per square inch and shall have a range not more than twice test pressure. Test rotational equipment for proper direction of rotation.
- B. Where testing is specified, or directed, complete installation shall comply with requirements hereinafter specified. Provide replacement materials and additional labor as may be required to accomplish this compliance.
- C. Tests shall be performed in presence of Owner's Representative. Owner shall be notified of testing schedule three working days prior to tests.
- D. Upon completion of testing, certify in writing, that specified tests have been performed and that installation complies with specified requirements.
- E. Hangers and Supports: With systems in normal operation, test hangers, supports, and rods to insure that they are plumb and supporting their proper share of load. Provide additional supports for systems and equipment that sway, crawl, or vibrate, as required or as directed by Owner's Representative to eliminate unsatisfactory conditions.
- F. When various systems are completed, operation tests shall be run on equipment to demonstrate proper operating conditions. These tests shall be run under observation of Owner's Representative. Systems shall be operated through possible cycles of operation for a period of three consecutive days. Operation tests shall be performed under actual service conditions. Installations must operate smoothly, efficiently, quietly, and without undue noise, vibration, surging or cycling under design conditions. Should any piece of equipment, apparatus, material or work fail in any of these tests, it shall be immediately removed and replaced with new, and portion of work replaced shall again be tested.
- G. See Section 23 05 93 Testing Adjusting and Balancing for additional information.

3.08 Lubrication

- A. Equipment shall be thoroughly lubricated before operating and again at time work is accepted. Contractor shall obtain proper type of lubricants to be used from equipment manufacturer.
- B. No equipment shall be put into running condition without first checking for proper lubrication, rotation, alignment, support, bracing, safety, blockage and connections and areas affected by running of such equipment.

3.09 Cleaning

- A. Thoroughly clean exterior and interior of piping, equipment and materials before systems are put in operation. Cleaning period shall be of sufficient duration to properly clean systems.
- C. Clean plenums and air ducts so that no dirt or dust is present. Seal ductwork until time of installation.
- D. Remove dirt and debris, including wire and blocking, from throughout building including crawl spaces and pipe spaces. Clean piping access areas of dirt and debris.
- E. Equipment and material shall be completely dust free, clean and rust free or polished when final acceptance is made.

END OF SECTION

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Testing, Adjusting and Balancing

Part 1. General

1.01 Section Includes

- A. Air systems.

1.02 Submittals

- A. Draft reports – submit electronic copy in PDF for review prior to final acceptance of project.
- B. Test Reports: Submit prior to final acceptance of project and for inclusion in operating and maintenance manuals. Provide in soft cover, letter size, 3-ring binder, with index page and tabs, and cover identification. Include reduced scale drawings with air outlets and equipment identified to correspond with data sheets and indicating thermostat locations. Provide minimum six copies of Final report and electronic copy in PDF.
- C. Report Forms: AABC National Standards for Total System Balancing
- D. Provide report of reading of existing air flows for all systems in the project scope prior to the start of construction and provide a final report at the end of construction.

Part 2. Products – not used

Part 3. Execution

3.01 Agencies (or approved equal)

- A. RS Analysis, Inc. (916) 358-5672
- B. Circo System Balance, Inc. (916) 387-5100.

3.02 Examination and Preparation

- A. Before commencing work, verify that systems are complete and operable.
- B. Report any defects, deficiencies, or abnormal conditions in mechanical systems which prevent system balance.
- C. Beginning of work means acceptance of existing conditions.
- D. Recorded data shall represent actually measured or observed condition.
- E. Permanently mark settings of valves, dampers, and other adjustment devices. Set and lock memory stops.

3.03 Installation Tolerance

- A. Air Handling Systems: Adjust to within plus or minus 10 percent of design for supply and exhaust systems of design.
- B. Air Outlets and Inlets: Adjust to within plus or minus 5 percent of design.

3.04 Air System Procedure

- A. Adjust air handling and distribution systems to provide required or design supply, and exhaust air quantities.
- B. Make air quantity measurements in ducts by traverse of entire cross-sectional area of duct.
- C. Measure air quantities at air inlets and outlets.

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- D. Use volume control devices to regulate air quantities only to extent that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct dampers
 - E. Make allowance for air filter resistance at the time of the tests. The main air supplies shall be at design air quantities and at an air resistance across the filter bank midway between the design specifications for clean and dirty filters.

END OF SECTION

Mechanical Insulation

Part 1. General

1.01 Section Includes

- A. Ductwork insulation, jackets and accessories

1.02 Submittals

- A. Product Data: Provide product description, list of materials and thickness for each service or equipment scheduled, locations, and manufacturer's installation instructions

1.03 Environmental Requirements

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

Part 2. Products

2.01 Ductwork Insulation

- A. Manufacturers:
 - 1. Owens-Corning Insulating Systems, LLC.
 - 2. JohnsManville.
 - 3. Knauf Insulation.
- B. Glass Fiber: Owens Corning® SOFTR Duct Wrap insulation or approved equal.
 - 1. Duct Wrap: Rigid, resin bonded fibrous glass blanket with a damage-resistant, flame retardant, reinforced aluminum foil (FRK) facing.
 - 2. Duct Wrap Insulation: ASTM C1290, Type III, to maximum service temperature of 250°F (121°C), and ASTM C1136, Type II, facing material.
 - 3. Portions of supply-air and return-air ducts ductwork conveying heated or cooled air located in one or more of the following spaces shall be insulated to a minimum installed level of R-8: outdoors, in a space between the roof and an insulated ceiling, in a space directly under a roof with fixed vents or openings to the outside or unconditioned spaces.
 - 4. Portions of supply-air and return-air ducts ductwork conveying heated or cooled air located in one or more of the following spaces shall be insulated to a minimum installed level of R-4.2: not in one of the spaces listed in 2.1.B.3 or enclosed in directly conditioned space (if not any higher level required by CMC Section 605). In addition, the following is required.
 - a) Mechanically fasten connections between metal ducts and the inner core of flexible ducts.
 - b) Joint and Seal openings with mastic, tape, aerosol sealant or other duct closure system that meets the applicable requirements of UL 181, UL 181A, UL 181B or UL 723 (aerosol sealant).
- C. Duct Liner: Owens Corning™ QuietR® Rotary Duct Liner, or approved equal
 - 1. Rigid, resin bonded fibrous glass blankets or board with a damage-resistant, flame retardant veil faced airstream surface.
 - a) Adhesives For Indoor Applications: VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - b) Fabricate duct insulation and liner board products with a black pigmented coating on the airstream side, to resist damage during installation and in

service. Factory coat edges with the same coating, to comply with SMACNA HVAC DCS.

Part 3. Execution

3.01 Examination and Preparation

- A. Verify that piping has been tested and is complete before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 Installation

- A. Install materials in accordance with manufacturer's instructions.
- B. Continue insulation vapor barrier through penetrations.
- C. Duct liner:
 - 1. Completely cover duct designated to receive duct liner. Neatly butt transverse joints without interruptions or gaps. Install the black pigmented surface of the duct liner facing the airstream.
 - 2. Complying with requirements of ASTM C916, adhere duct liner to the sheet metal with 90% coverage of adhesive.
 - 3. In addition to the adhesive, secure duct liner with mechanical fasteners, either weld-secured or impact-driven, which shall compress the duct liner sufficiently to hold it firmly in place. Adhesive bonded pins are not permitted due to long-term adhesive aging characteristics.
 - 4. Space mechanical fasteners in accordance with SMACNA HVAC DCS.

3.03 Ductwork Insulation Schedule

	Thickness
A. Glass Fiber Insulation:	
Supply Ducts	as required to meet 2.01.B.3 or 4
Return Ducts	as required to meet 2.01.B.3 or 4
B. Duct Liner:	
Where indicated	as required to meet 2.01.B.3 or 4

END OF SECTION

Air Distribution

Part 1. General

1.01 Section Includes

- A. Ductwork and accessories
- B. Volume control dampers

1.02 Submittals

- A. Product Data: Provide product data for products described in Part 2.

Part 2. Products

2.01 Ductwork

- A. Materials:
 - 1. Steel Ductwork: Galvanized sheet steel, lock-forming quality.
 - 2. Sealant: UL Listed, non-hardening, water resistant, fire-resistant, used alone or with tape.
- B. Metal ductwork
 - 1. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards Metal and Flexible, except as indicated.
 - 2. Construct T's, bends, and elbows with radius of 1-1/2 times width of duct on center line. Where not possible provide turning vanes.
 - 3. Increase duct sizes gradually, not exceeding 30 degrees divergence and 45 degrees convergence.
 - 4. Connect flexible ducts to metal ducts with stainless steel draw bands.
 - 5. Round duct shall be spiral lock seams and joints shall be beaded sleeve or crimp. Elbows shall be full radius, die stamped type. Duct and fittings shall be United McGill "Uni-Seal", MinnieMetal, or equal.
 - 6. Rectangular duct longitudinal seams shall be Pittsburgh lock. Transverse joints shall be pocket lock sealed with canvas and adhesive, or Ductmate (no Ductmate Jr.).
 - 7. Duct and plenum joints and field formed seams shall be sealed for air tightness. Tape shall be of 6 oz. canvas saturated with Arabol or Hardcast "Versa-Grip 181" duct sealant without tape. Tape or sealant shall be extended a minimum of one inch beyond joint or seam openings. Tape or sealant shall also be applied at duct connection to diffusers and grilles.
 - 8. Where internal insulation is applied, duct sizes as shown on drawings shall be inside clear dimensions.
 - 9. Pressure sensitive duct tape not permitted.

2.02 Volume Control Dampers

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- B. Fabricate single blade dampers for duct sizes to 12 x 30 inch.

-
- C. Fabricate multi-blade damper of opposed blade pattern with maximum blade sizes 12 x 72 inches. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware
 - D. Provide end bearings, except in round ductwork 12 inches and smaller.
 - E. Provide locking, indicating quadrant regulators on single and multi-blade dampers. Where width exceeds 30 inches provide regulator at both ends.

2.03 Flexible Duct Connectors

- A. UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, approximately 3 inches wide, crimped into metal edging strip. Suitable for outdoor installation.

2.04 Duct Access Doors

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Access doors smaller than 12 inches square may be secured with sash locks. Access doors with sheet metal screw fasteners are not acceptable.

Part 3. Execution

3.01 Installation

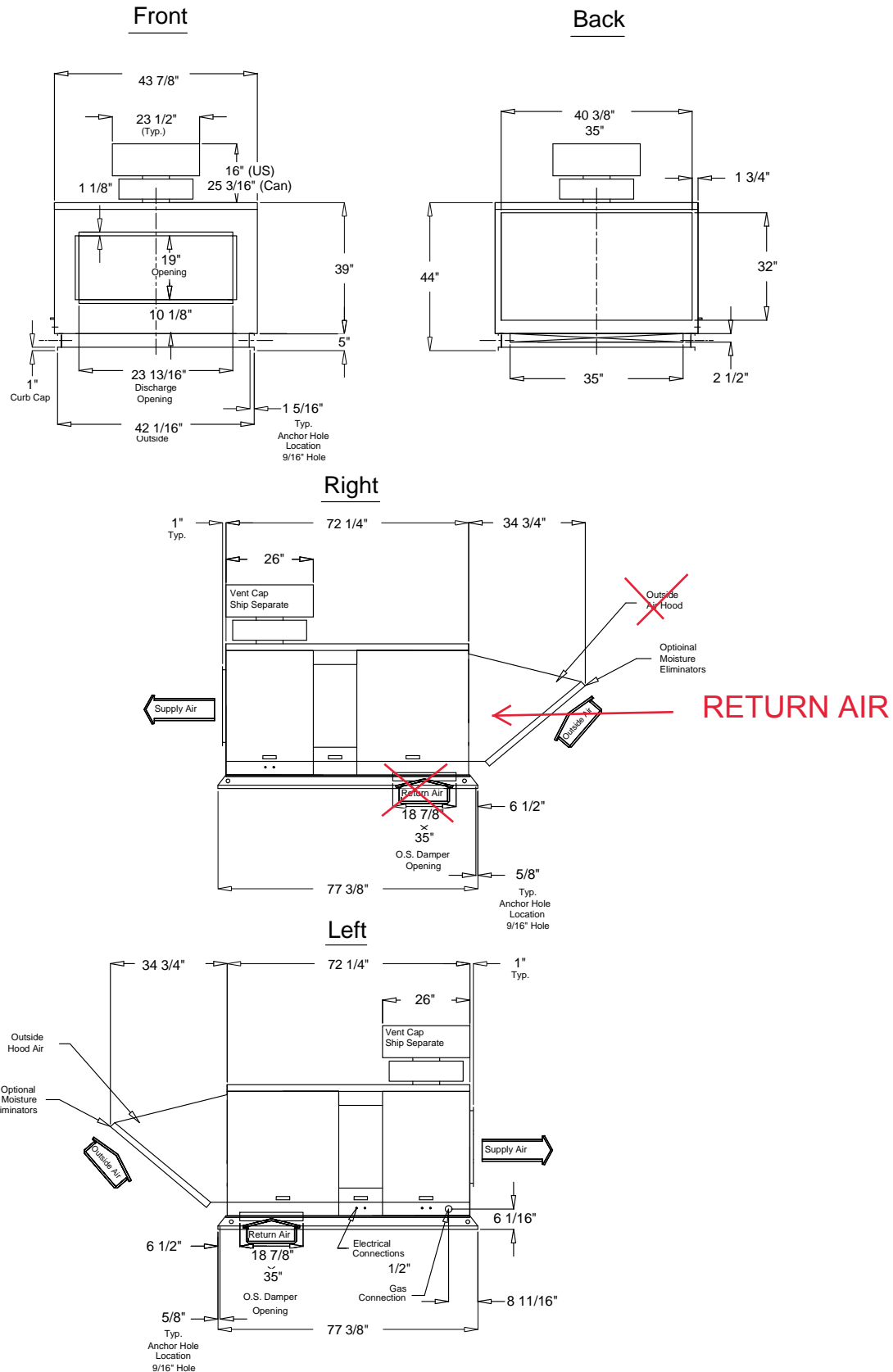
- A. Install products in accordance with manufacturer's instructions.
- B. Install flexible connections specified between fan inlet and discharge ductwork. Flexible connectors shall not be in tension while fan is operating.
- C. Provide backdraft dampers on discharge of exhaust fans and as indicated.
- D. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with hole plugs to ensure against air leakage.
- E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- F. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- G. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffuser or register assembly.
- H. Ductwork shall be constructed to meet Pressure Classification of STV per SMACNA HVAC Duct Construction Standards Table 1-1.
- I. Duct sealing shall meet requirements of Seal Classification C of SMACNA HVAC Duct Construction Standards Table 1-2..
- J. Provide flexible connections immediately adjacent to equipment in ducts associated with fans and motorized equipment.

END OF SECTION

Mechanical Cut sheets

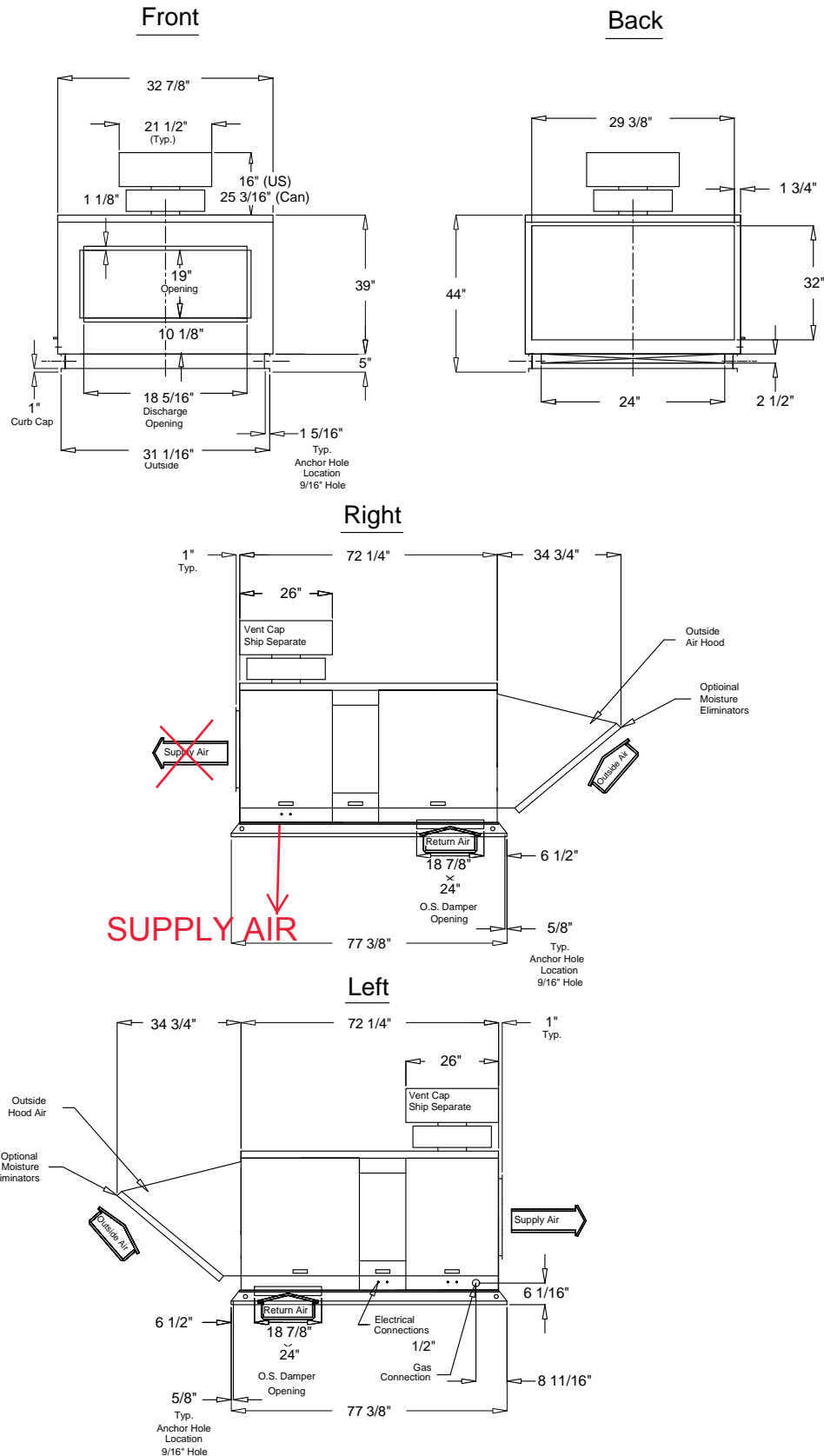
Unit Dimensions - Indirect Fired Gas Heating Units (Outdoor)Item: A1 Qty: 1 Tag(s): **RTU-3 and 4** (GRAA20GDBF0)

895 lbs including curb

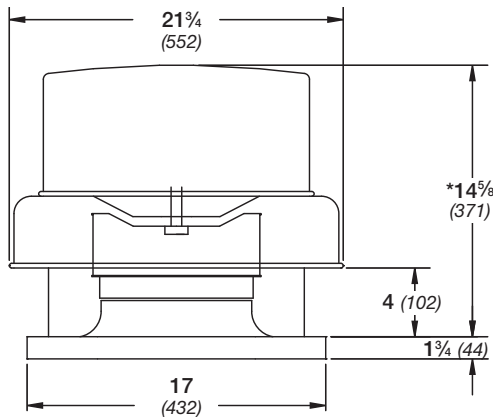


Unit Dimensions - Indirect Fired Gas Heating Units (Outdoor)Item: A2 Qty: 2 Tag(s): **RTU-1, RTU-2** (GRAA15GDBF0)

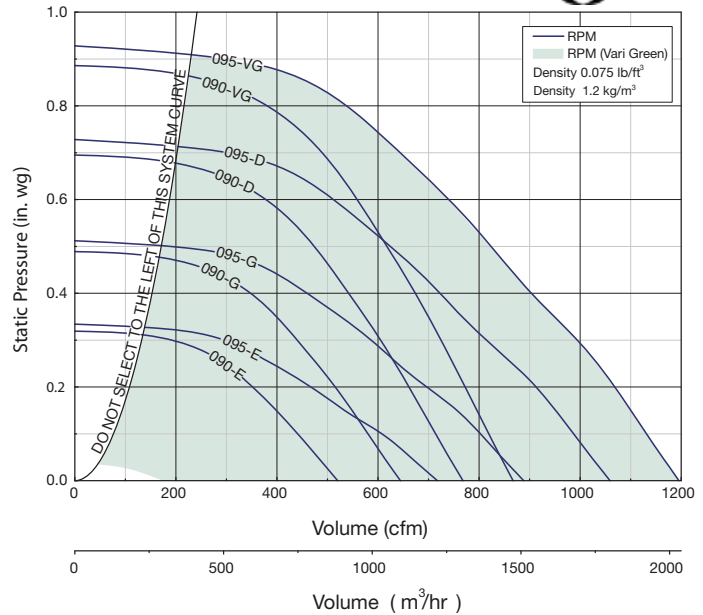
784 lbs including curb



Roof Downblast - Exhaust Direct Drive G-090 • G-095



Static Pressure (Pa)





Damper Size = 10 x 10 (254 x 254)
Roof Opening = 12½ x 12½ (318 x 318)
Shroud Thickness = 0.064 (1.6)
Motor Cover Thickness = 0.040 (1.0)
Curb Cap Thickness = 0.064 (1.6)
^Approximate Unit Weight = 22 lbs. (10 kg)

All dimensions in inches (millimeters). *May be greater depending on motor.
^Weight shown is largest cataloged Open Drip-Proof motor.

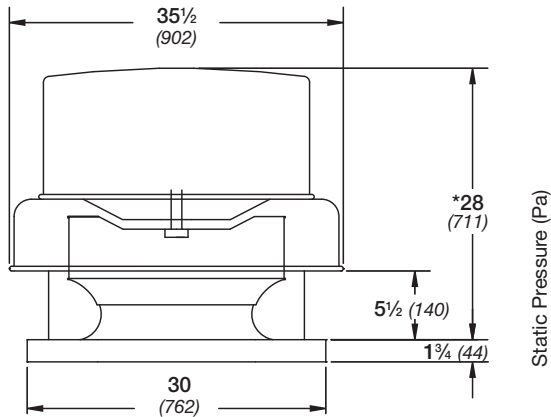
Direct Drive RPM

E-1050 RPM G-1300 RPM D-1550 RPM VG-1725 RPM

Direct Drive	Motor HP	Fan RPM	Static Pressure in Inches wg										
				0	0.1	0.125	0.15	0.2	0.25	0.3	0.375	0.5	0.625
090													
VG-1/6 or 1/4 	E-1/40	1050	CFM	520	441	420	398	351	293				
			BHP	0.01	0.02	0.02	0.02	0.02	0.02				
			Sones	4	3.9	3.9	4	4.1	4.2				
	G-1/25	1300	CFM	644	580	565	549	515	478	440	373		
			BHP	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05		
			Sones	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.6		
	D-1/15	1550	CFM	768	714	701	688	662	633	605	557	473	338
			BHP	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.07
			Sones	7.6	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.8
		1725	CFM	855	806	794	782	759	735	709	671	600	522
			BHP	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.11
			Sones	9.7	9.5	9.5	9.5	9.5	9.4	9.4	9.2	9.1	9.1
095													
VG-1/6 or 1/4 	E-1/30	1050	CFM	717	606	570	534	468	389	290			
			BHP	0.03	0.03	0.04	0.04	0.04	0.04	0.03			
			Sones	5.4	4.5	4.5	4.5	4.4	4.5	4.6			
	G-1/12	1300	CFM	888	802	780	754	695	640	586	493	184	
			BHP	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.05	
			Sones	7.6	6.8	6.7	6.6	6.5	6.4	6.4	6.4	6.8	
	D-1/8	1550	CFM	1059	987	969	950	912	863	814	745	623	474
			BHP	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.11
			Sones	9.6	9.4	9.3	9.2	9	8.8	8.7	8.7	8.7	8.7
		1725	CFM	1179	1114	1098	1081	1048	1013	969	903	800	688
			BHP	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16
			Sones	11.4	11.4	11.4	11.5	11.4	11.2	11	10.9	11.3	11.3

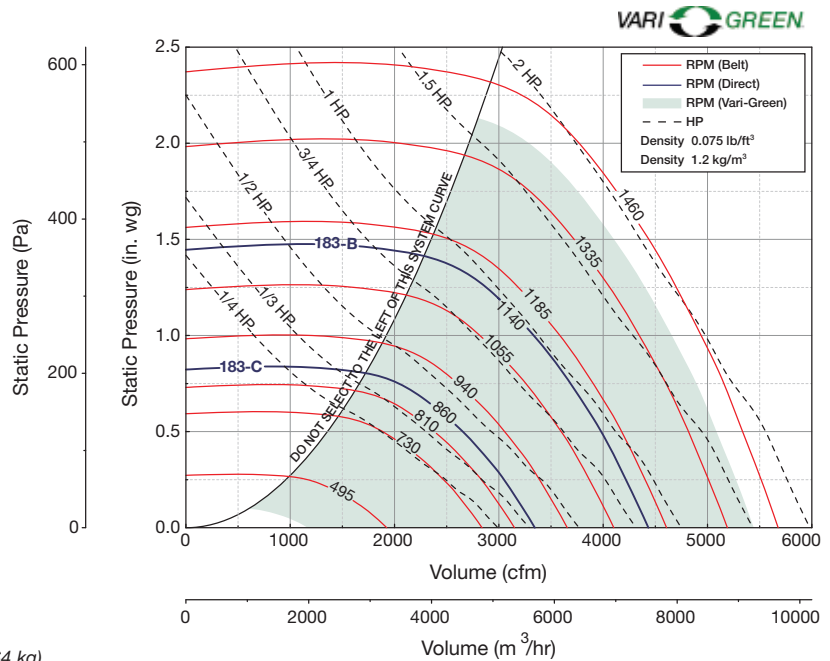
Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings include the effects of a birdscreen. The sound ratings shown are loudness values in hemispherical sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels.

Roof Downblast - Exhaust Belt & Direct Drive GB-180 • G-183



Damper Size = 18 x 18 (457 x 457)
Roof Opening = 20 1/2 x 20 1/2 (521 x 521)
Shroud Thickness = 0.064 (1.6)
Motor Cover Thickness = 0.040 (1.0)
Curb Cap Thickness = 0.064 (1.6)
^Approximate Unit Weight G/GB = 108/142 lbs. (49/64 kg)

All dimensions in inches (millimeters). *May be greater depending on motor. ^Weight shown is largest cataloged Open Drip-Proof motor.



Direct Drive RPM

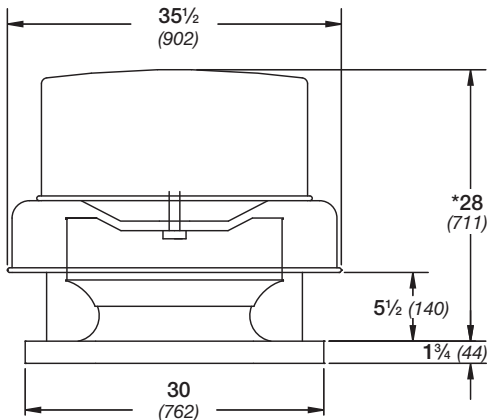
C-860 RPM

B-1140 RPM

Motor HP		Fan RPM		Static Pressure in Inches wg											
Belt	Direct				0	0.125	0.25	0.5	0.75	1	1.25	1.5	1.75	2	
Belt 180	183														
1/4	VG-1		730	CFM	2839	2668	2469	1882							
				BHP	0.21	0.23	0.25	0.25	MAXIMUM BHP AT A GIVEN RPM = (RPM/1149) ³ MAXIMUM RPM = 1460 TIP SPEED (ft/min) = RPM x 4.843 MAXIMUM MOTOR FRAME SIZE = 184T						
				Sones	7.4	8.7	7.2	6.7							
1/3		810	CFM	3150	2997	2832	2375								
			BHP	0.29	0.31	0.33	0.35								
			Sones	8.8	9.9	8.7	8.2								
1/2	C-1/2		860	CFM	3344	3202	3049	2647	2015						
				BHP	0.35	0.36	0.39	0.42	0.4						
				Sones	10.1	10.8	9.8	9.1	8.1						
			940	CFM	3655	3527	3388	3052	2601						
				BHP	0.46	0.47	0.49	0.54	0.54						
				Sones	12.7	12.8	12.0	11.1	10.3						
3/4	C-1/2		1000	CFM	3888	3769	3638	3339	2953	2387					
				BHP	0.55	0.57	0.58	0.64	0.66	0.63					
				Sones	15.2	14.7	13.7	13.0	11.9	11.1					
			1055	CFM	4102	3990	3867	3596	3252	2811					
				BHP	0.65	0.67	0.68	0.74	0.77	0.77					
				Sones	16.2	15.7	14.9	14.0	12.9	12.4					
1	VG-2		B-1	1140	CFM	4433	4329	4216	3980	3684	3328	2856			
					BHP	0.81	0.84	0.85	0.93	0.96	0.98	0.95			
					Sones	17.9	17.4	16.8	16.0	15.1	14.3	13.6			
			1185	CFM	4608	4508	4401	4179	3900	3575	3178	2499			
				BHP	0.91	0.94	0.96	1.03	1.07	1.1	1.09	0.99			
				Sones	19.0	18.4	17.8	17.1	16.2	15.4	14.7	13.7			
1½		1335	CFM	5191	5102	5010	4814	4599	4344	4052	3713	3262			
			BHP	1.31	1.33	1.36	1.41	1.49	1.54	1.57	1.56	1.51			
			Sones	22	22	21	21	19.9	19.2	18.7	18.2	17.6			
2	X		1400	CFM	5444	5359	5273	5086	4892	4655	4401	4097	3747	3253	
				BHP	1.51	1.54	1.56	1.61	1.71	1.75	1.81	1.81	1.79	1.71	
				Sones	24	23	23	22	22	21	21	20	19.7	19.2	
			1460	CFM	5677	5596	5514	5336	5155	4938	4699	4426	4123	3765	
				BHP	1.71	1.74	1.77	1.81	1.93	1.97	2.03	2.05	2.05	2.02	
				Sones	26	25	24	24	23	23	22	22	22	21	

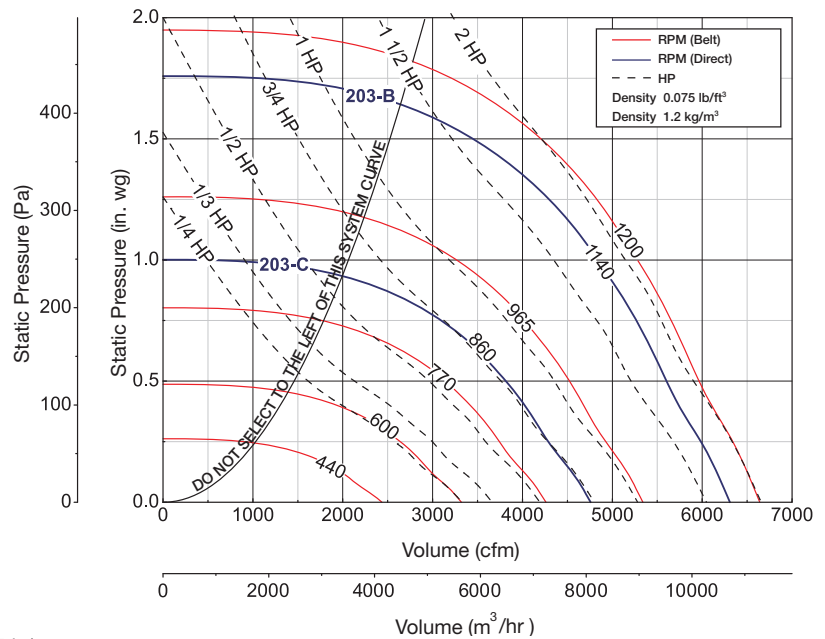
Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings include the effects of a birdscreen. The sound ratings shown are loudness values in hemispherical sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels.

Roof Downblast - Exhaust Belt & Direct Drive GB-200 • G-203



Damper Size = 18 x 18 (457 x 457)
Roof Opening = 20 1/2 x 20 1/2 (521 x 521)
Shroud Thickness = 0.064 (1.6)
Motor Cover Thickness = 0.040 (1.0)
Curb Cap Thickness = 0.064 (1.6)
^Approximate Unit Weight G/GB = 119/144 lbs. (54/65 kg)

All dimensions in inches (millimeters). *May be greater depending on motor. ^Weight shown is largest cataloged Open Drip-Proof motor.



Direct Drive RPM

C-860 RPM

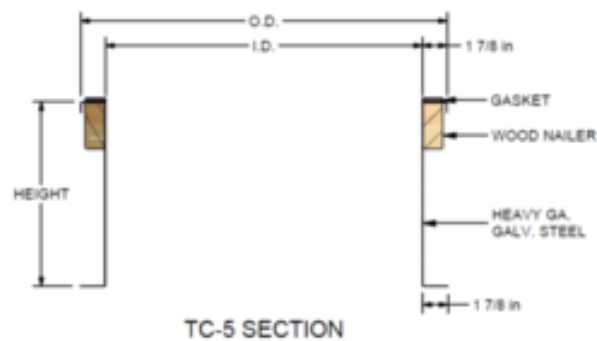
B-1140 RPM

Motor HP		Fan	Static Pressure in Inches wg										
Belt	Direct	RPM		0	0.125	0.25	0.375	0.5	0.75	1.0	1.25	1.5	1.75
200	203												
1/4		440	CFM	2435	1976								
			BHP	0.1	0.1								
			Sones	6.5	5.8								
		600	CFM	3320	2984	2637	2089						
			BHP	0.25	0.26	0.26	0.25						
			Sones	8.5	7.9	7.3	6.1						
1/3		665	CFM	3680	3378	3085	2706	2087					
			BHP	0.34	0.34	0.35	0.35	0.33					
			Sones	9.6	9	8.5	7.7	6.7					
1/2		718	CFM	3973	3700	3422	3109	2684					
			BHP	0.43	0.43	0.45	0.45	0.44					
			Sones	10.8	10	9.6	9	8.3					
		770	CFM	4261	4013	3744	3477	3141					
			BHP	0.52	0.53	0.55	0.55	0.55					
			Sones	12.1	11	10.7	10.2	9.8					
3/4	C-3/4	860	CFM	4759	4548	4289	4068	3811	3085				
			BHP	0.73	0.74	0.75	0.77	0.77	0.74				
			Sones	14.1	13.3	12.9	12.4	11.8	11.1				
1		965	CFM	5340	5158	4927	4720	4520	4015	3240			
			BHP	1.03	1.04	1.05	1.08	1.09	1.08	1.02			
			Sones	16.7	16	15.4	15	14.5	13.7	13			
1½		1028	CFM	5689	5517	5309	5101	4918	4488	3911	2941		
			BHP	1.25	1.26	1.27	1.29	1.31	1.32	1.28	1.14		
			Sones	18.5	17.8	17.2	16.8	16.4	15.6	14.7	14.6		
	1090	CFM	6032	5870	5682	5473	5301	4925	4450	3751			
		BHP	1.49	1.5	1.51	1.52	1.56	1.56	1.56	1.48			
		Sones	20	19.6	18.9	18.4	18.1	17.5	16.8	15.8			
2	B-2	1140	CFM	6308	6154	5980	5779	5606	5267	4832	4287	3439	
			BHP	1.7	1.71	1.72	1.74	1.77	1.79	1.79	1.75	1.61	
			Sones	22	21	21	20	19.7	19.1	18.5	17.5	16.5	
		1200	CFM	6640	6494	6336	6145	5969	5651	5274	4829	4177	3077
			BHP	1.99	2	2.01	2.02	2.04	2.09	2.09	2.08	1.99	1.69
			Sones	24	23	23	22	22	21	21	19.9	18.6	16.7

MAXIMUM BHP AT A GIVEN RPM = (RPM/938)³
MAXIMUM RPM = 1200
TIP SPEED (ft/min) = RPM x 5.596
MAXIMUM MOTOR FRAME SIZE = 184T

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings include the effects of a birdscreen. The sound ratings shown are loudness values in hemispherical sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels.

NON INSULATED ROOF CURBS



Curb insulation (by others) and cant applied at job site as required

Standard

1. Factory installed wood nailer.
2. Standard height 14".
3. Prime G-90 Galvanized Steel
4. Fully welded corners
5. Base flange attachments for securing to the building structure
6. Reinforced sides
7. Gasketing

Optional Features Available

- Special heights
- Heavier gauge of metal
- Aluminum construction and stainless steel
- Factory installed burglar bars
- Construction to fit single or double roof pitches
- Extended base plates for dampers
- Chemically treated wood nailers

Specifications

Pre-fabricated roof curbs to be of prime galvanized steel construction 14, 16, 18 or 20 gauge as required, meeting ASTM A653/653M, with welded corners and seams joined by continuous welds. Curbs shall be factory installed wood nailer fastened from inside of roof curb. Height to be 8" above finished roof deck or as detailed. Top of all roof curbs shall be level, with pitch built into curb when deck slopes.

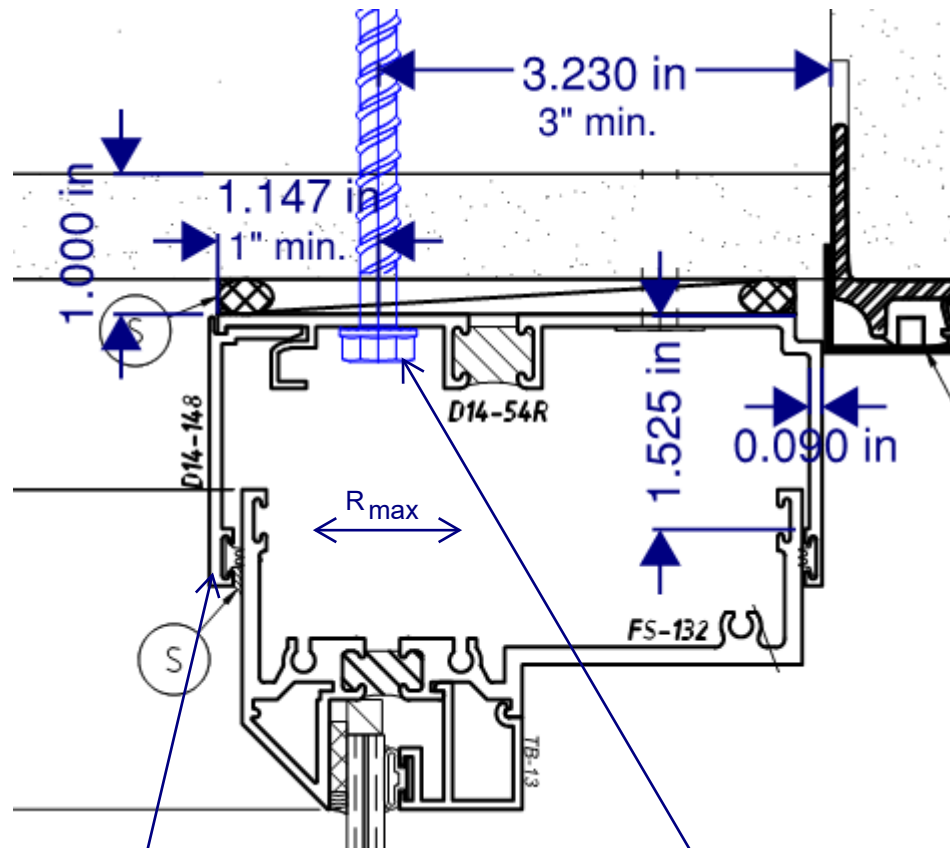
Window Cut sheets

Head & Jamb Concrete Receptor Anchor

Detail Ref.

Sheet No:

A1



USE Continuous 0.090" Thick Alum. Receptor
(6063-T6 or Better)

USE 1/4" Hilti KH-EZ screw anchors
(4) @ Horizontals, spaced at 6" O.C.
& (1) spaced at 24" O.C. elsewhere
2-1/2" min. Embedment
3" min. Edge Distance
(Assume 3000 psi NW Concrete, by Others)

$WL := 24\text{psf}$
 $R_{\text{Horz}} := WL \cdot 51.25\text{in} \cdot 64\text{in} = 546.67\text{lbf}$
 $S_F := 24\text{in}$
 $R_{\text{Oc}} := WL \cdot 38.5\text{in} \cdot S_F = 154\text{lbf}$

Head & Jamb Concrete Receptor Anchor

Detail Ref.

Sheet No:
 A1 A

(1) Check Local Bending on Receptor

$t_1 := 0.0900\text{in}$ thickness
 $l_1 := 32\text{in}$ width
 $M_1 := R_{\text{Horz}} \cdot 1.5\text{in} = 820\text{in} \cdot \text{lbf}$

$$f_{b1} := \frac{M_1 \cdot 6}{t_1^2 \cdot l_1} = 18981.48\text{psi}$$

 $F_{b1} := 20\text{ksi}$ **6063-T6**

$$\text{INT}_1 := \frac{f_{b1}}{F_{b1}} = 0.95$$
 OK

USE Continuous 0.090" Thick Alum. Receptor (6063-T6 or Better)

(2) Check Concrete Anchors at Horizontals

$n_2 := 3$ number of fasteners
 $V_2 := 1.6 \cdot R_{\text{Horz}} = 874.67\text{lbf}$

$$T_2 := 1.6 \cdot \frac{R_{\text{Horz}} \cdot 2.5\text{in}}{0.85 \cdot 1\text{in}} = 2572.55\text{lbf}$$

ASSUME: $F'c=3000\text{psi}$ Normal Weight Cracked Concrete
Design per Sheets A1B-A1C

USE (4) 1/4" Hilti KH-EZ screw anchors
2-1/2" min. Embedment
6" min. Spacing
3" min. Edge Distance

(2a) Fastener Bending

$$V_{2a} := \frac{R_{\text{Horz}}}{n_2} = 182.22\text{lbf}$$

 $\text{dia}_{2a} := 0.25\text{in}$
 $\text{shim}_{2a} := 1\text{in}$
 $F_{y2a} := 92\text{ksi}$ **92ksi Grade5**

$$f_{b2a} := \frac{0.5 \cdot V_{2a} \cdot \text{shim}_{2a}}{0.098175 \cdot \text{dia}_{2a}^3} = 59395.07\text{psi}$$

 $F_{b2a} := 0.75 \cdot F_{y2a} = 69000\text{psi}$

$$\text{INT}_{2a} := \frac{f_{b2a}}{F_{b2a}} = 0.86$$
 OK

(2.2) Check Concrete Anchors at Horizontals for Seismic

$n_{2.2} := 3$ number of fasteners

$$V_{2.2} := 1.5 \cdot \frac{14.17}{24} \cdot R_{\text{Horz}} = 484.14\text{lbf}$$

$$T_{2.2} := 1.5 \cdot \frac{14.17}{24} \cdot \frac{R_{\text{Horz}} \cdot 2.5\text{in}}{0.85 \cdot 1\text{in}} = 1423.95\text{lbf}$$

ASSUME: $F'c=3000\text{psi}$ Normal Weight Cracked Concrete
Design per Sheets A1F-A1G

(2.1) Check Concrete Anchors at O.C. Spacing

$n_{2.1} := 1$ number of fasteners
 $V_{2.1} := 1.6 \cdot R_{\text{Oc}} = 246.4\text{lbf}$

$$T_{2.1} := 1.6 \cdot \frac{R_{\text{Oc}} \cdot 2.5\text{in}}{0.85 \cdot 1\text{in}} = 724.71\text{lbf}$$

ASSUME: $F'c=3000\text{psi}$ Normal Weight Cracked Concrete
Design per Sheets A1D-A1E

USE (1) 1/4" Hilti KH-EZ screw anchor
Spaced @ 24" O.C. max.
2-1/2" min. Embedment
3" min. Edge Distance

(2.1a) Fastener Bending

$$V_{2.1a} := \frac{R_{\text{Oc}}}{n_{2.1}} = 154\text{lbf}$$

 $\text{dia}_{2.1a} := 0.25\text{in}$
 $\text{shim}_{2.1a} := 1\text{in}$
 $F_{y2.1a} := 92\text{ksi}$ **92ksi Grade5**

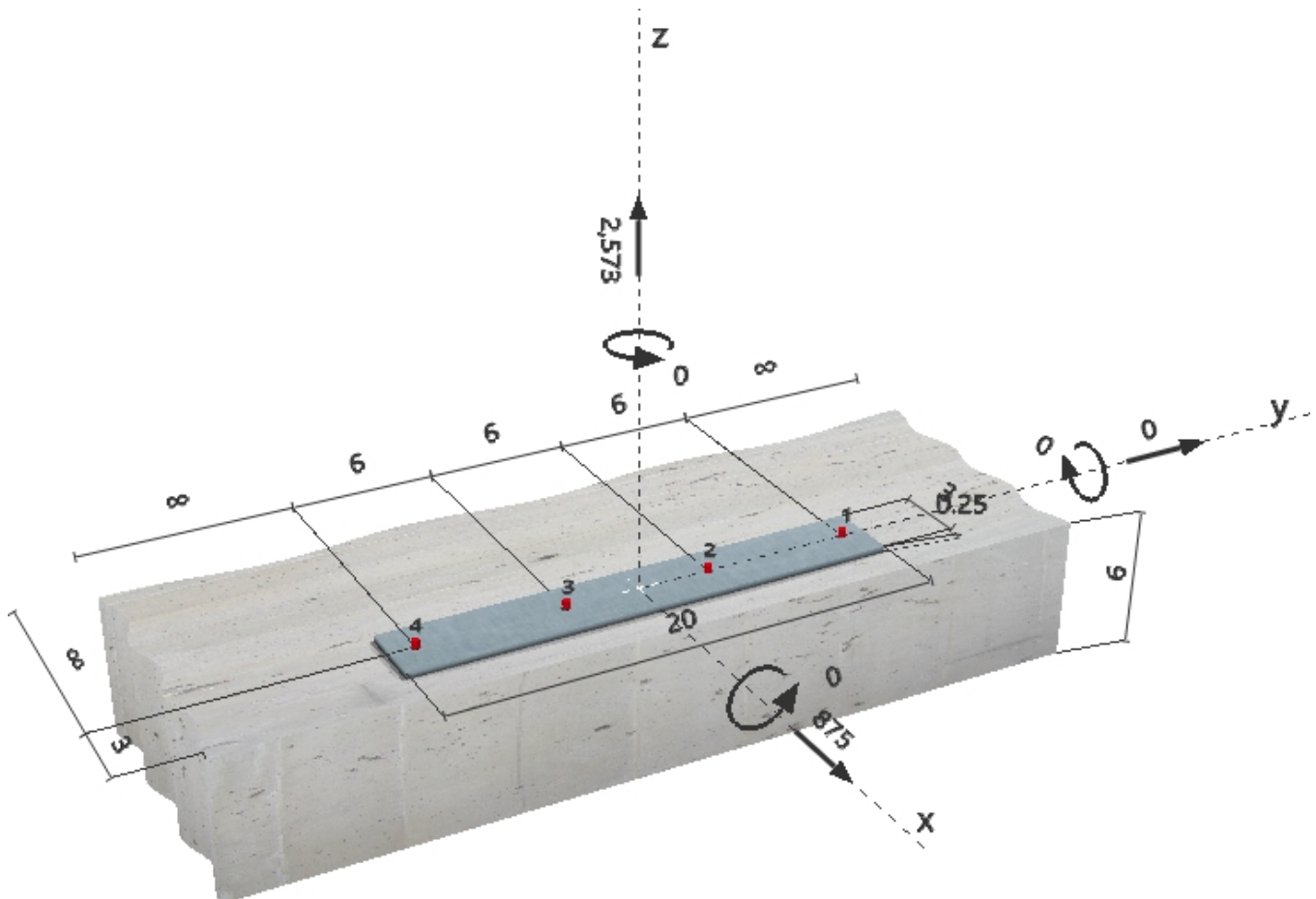
$$f_{b2.1a} := \frac{0.5 \cdot V_{2.1a} \cdot \text{shim}_{2.1a}}{0.098175 \cdot \text{dia}_{2.1a}^3} = 50196.08\text{psi}$$

 $F_{b2.1a} := 0.75 \cdot F_{y2.1a} = 69000\text{psi}$

$$\text{INT}_{2.1a} := \frac{f_{b2.1a}}{F_{b2.1a}} = 0.73$$
 OK

Specifier's comments:
1 Input data

Anchor type and diameter:	KWIK HUS-EZ (KH-EZ) 1/4 (2 1/2)
Effective embedment depth:	$h_{ef,act} = 1.920 \text{ in.}$, $h_{nom} = 2.500 \text{ in.}$
Material:	Carbon Steel
Evaluation Service Report:	ESR-3027
Issued Valid:	2/1/2016 12/1/2017
Proof:	Design method ACI 318-14 / Mech.
Stand-off installation:	$e_b = 0.000 \text{ in.}$ (no stand-off); $t = 0.250 \text{ in.}$
Anchor plate:	$l_x \times l_y \times t = 3.000 \text{ in.} \times 20.000 \text{ in.} \times 0.250 \text{ in.}$; (Recommended plate thickness: not calculated)
Profile:	no profile
Base material:	cracked concrete, 3000, $f'_c = 3,000 \text{ psi}$; $h = 6.000 \text{ in.}$
Installation:	hammer drilled hole, Installation condition: Dry
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: none or < No. 4 bar


Geometry [in.] & Loading [lb, in.lb]


Company:
 Specifier:
 Address:
 Phone | Fax: |
 E-Mail:

Page: A1 C
 Project:
 Sub-Project | Pos. No.:
 Date: 4/3/2018

2 Proof | Utilization (Governing Cases)

Loading	Proof	Design values [lb]		Utilization	
		Load	Capacity	β_N / β_V [%]	Status
Tension	Pullout Strength	643	830	78 / -	OK
Shear	Concrete edge failure in direction x+	875	3,145	- / 28	OK

Loading	β_N	β_V	ζ	Utilization $\beta_{N,V}$ [%]	Status
Combined tension and shear loads	0.775	0.278	5/3	78	OK

3 Warnings

- Please consider all details and hints/warnings given in the detailed report!

Fastening meets the design criteria!

4 Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.



Pole Operated Handle

Part #: **158 001 style**

White Bronze, Satin Brushed, 0125

[Request a quote](#)

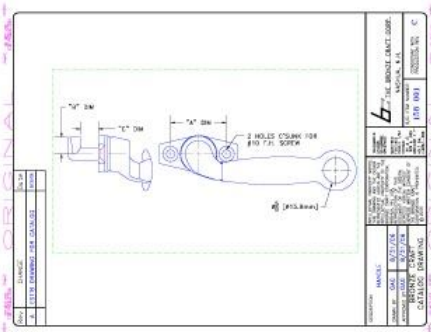
This original Bronze Craft handle has become the industry standard for project in windows and is available in a variety of mounting hole spacing and cam lengths. Also available in hand operated and custodial lock versions.

Part Numbers marked in **RED** are stock items. Part Numbers listed in **Black** are not stocked and must be manufactured.

			"A" Dim - Mounting Holes		
"C" Dim Cam	"B" Dim Lug Height	Handing	1 3/8" 34.9 mm	1 7/16" 36.5 mm	1 1/2" 38.1 mm
7/16" 11.1 mm	13/32" 10.3 mm	Shown	158 001	158 039	158 041
		Opposite	158 003	158 040	158 045
9/16" 14.3 mm	15/32" 11.9 mm	Shown	158 042	158 043	158 044
		Opposite	158 046	158 047	158 048

Works With:

[210 series](#) keepers.



[Click here to download as a PDF.](#)

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Products

Window Actuators

Projected Hardware

Project Out Hardware

Hurricane Hardware

Specify Hurricane Hardware

Project In Hardware

Handles

Pole Operated Handles

Pole Operated Handle (158 001 style)

Pole Operated Handle (158 005 style)

Pole Operated Handle (158 009 style)

Pole Operated Handle (158 049 style)

Custodial Locks

Spring Catches

Keepers

Concealed Locks

Casement Hardware

Hung/Sliding Hardware

Hardware Accessories

Hinges

Tilt-Turn Systems

Standard Finish Options

Memorials

BC Novelties

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[Window Control Systems](#)
[Traditional Hardware](#)
[Novelties](#)

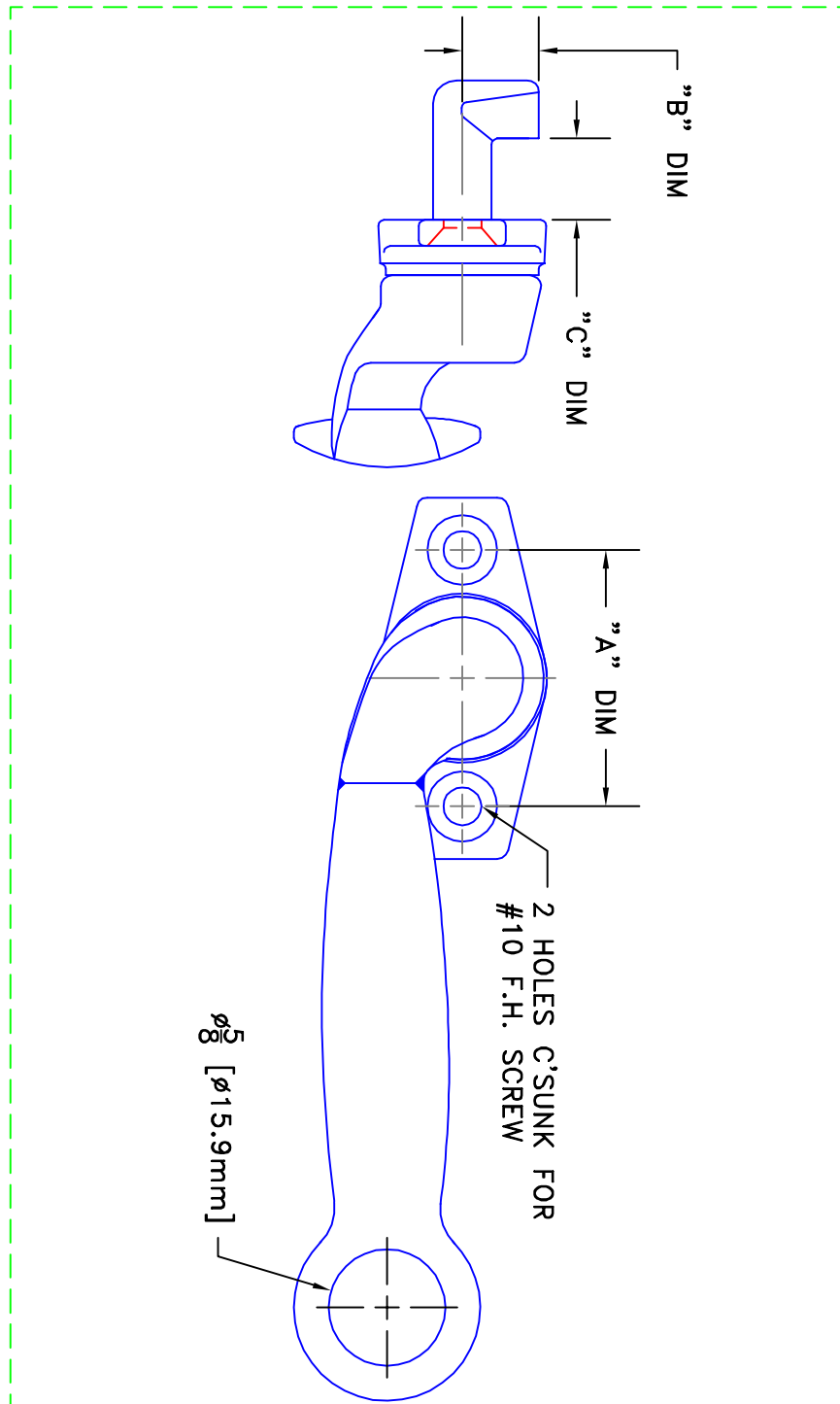
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[Custom Casting Capabilities](#)
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Contact Us

Bronze Craft Corporation
 37 Will Street,
 Nashua, NH 03060

Rev	CHANGE	Date
A	EST'B DRAWING FOR CATALOG	8/31/06



DESCRIPTION <div>HANDLE</div>		<p>INTELLECTUAL PROPERTY NOTICE. THIS DRAWING AND THE DESIGN REPRESENTED HEREIN ARE THE INTELLECTUAL PROPERTY OF THE BRONZE CRAFT CORPORATION, NASHUA, NH, USA. REPRODUCTION OF THIS DOCUMENT OR THE DESIGN DEPICTED HEREIN, WITHOUT EXPRESS WRITTEN CONSENT OF THE BRONZE CRAFT CORPORATION IS PROHIBITED. © 2005</p>	<p>TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <p>MACHINED FEATURES FRAC.± 1/64 DECIMAL XX ± .01 XXX ± .005 ANGULAR ± 1° HOLE DIA. +.003/- .002</p>	 <div>THE BRONZE CRAFT CORP.</div> <div>NASHUA, N.H.</div>	
DRAWN BY GAG	8/31/06				B/C ITEM NUMBER <div>158 001</div>
APPROVED BY GAG	8/31/06				
BRONZE CRAFT CATALOG DRAWING					

1150S Series

2" Heavy Commercial

Thermally Improved Window

SECTION 08520 ALUMINUM WINDOWS

SERIES 1150S Thermal AW/HC___ Grade _____ Windows

PART 1 GENERAL

1.01 Work Included

- A. Furnish and install aluminum architectural windows complete with hardware and all related components as shown on drawings and specified in this section.

Insert 1150S Series Thermal.

- B. All windows shall be Winco (1150S) AW/HC_____. Other manufacturers requesting approval to bid their product as an equal must submit the following information fifteen days prior to close of bidding.
 - 1. A sample window (size and configuration) as per requirements of architect.
 - 2. Detail cuts and product data.
 - 3. Test reports documenting compliance with requirements of section 1.05.
 - C. Glass and Glazing
 - 1. All units shall be factory glazed.
- OR-**
- 1. Reference Section 08800 for Glass and Glazing.

1.02 Related Work

- A. Section 08400 - Entrance and Storefronts
- B. Section 08480 - Balanced Door Assemblies
- C. Section 08640 - Glazed Patio Doors
- D. Section 08652 - Replacement Windows
- E. Section 08900 - Glazed Curtain Walls
- F. Section 08960 - Slope Glazing System
- G. Section 07900 - Caulking and Sealants

1.03 Items Installed But Not Furnished

1.04 Items Installed But Not Furnished

1.05 Testing and Performance Requirements

- A. Test Units
 - 1. Air, water, and structural test unit shall conform to requirements set forth in ANSI/AAMA/NWDA 101/I.S.2-97.
- B. Test Procedures and Performances
 - 1. All windows shall conform to ANSI/AAMA/NWDA 101/I.S.2-97 requirements for referenced window type in section 1.01B. In addition, the following specific performance requirements shall be met.
 - 2. Air Infiltration Test
 - a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 283 at static air pressure of 6.24 psf.
 - b. Air infiltration shall not exceed .1 cfm per square foot.
 - 3. Water Resistance Test
 - a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 331 at static pressure difference of _____ psf.
 - b. There shall be no uncontrolled water leakage.
 - 4. Uniform Load Deflection Test
 - a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference (positive and negative) of ____ psf.
 - b. During the course of the test, no member shall deflect more than 1/175 of its span.

1150S Series

2" Heavy Commercial

Thermally Improved Window

5. Uniform Load Structural Test
 - a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of ____ psf.
 - b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage, which would cause the window to be inoperable.
 6. Condensation Resistance Test (CRF)
 - a. With window sash closed and locked, test unit in accordance with AAMA 1503.1.
 - b. Condensation Resistance Factor (CRF) shall not be less than ____.
 7. Thermal Transmittance Test (Conductive U-Value)
 - a. With window sash closed and locked, test unit in accordance with AAMA 1503.1.
 - b. Conductive thermal transmittance (U-Value) shall not be more than ____ BTU/hr/sf/ per degrees F.
 8. Life Cycle Test
 - a. Tested in accordance with AAMA 910, there shall be no damage to fasteners, parts, support arms, activating mechanisms, or any other damage, which would make the window inoperable. Subsequent air infiltration and water resistance tests shall not exceed specified requirements
- .*=For certified test reports consult Winco.

1.06 Quality Assurance

- A. Provide test reports from AAMA accredited laboratory certifying the performance as specified in Section 1.05.
- B. Test reports shall be accompanied by the window manufacturer's letter of certification stating that the tested window meets or exceeds the afore mentioned criteria for the appropriate ANSI/AAMA/NWDA 101/I.S.2-97.

1.07 References

1.08 Submittals

- A. Contractor or window manufacturer shall submit shop drawings, finish samples, test reports, and warranties, per requirements of architect.
 1. Shop Drawings: Include typical unit elevations, full- or half-scaled detail sections and typical installation details. Include type of glazing, screening, and window finish.
 2. Product Data: Manufacturer's specifications, recommendations and standard details for window units.
 3. Samples of materials may be requested without cost to owner, i.e. frame sections, corner samples, mullions, extrusions, anchors, and glass.

1.09 Delivery, Storage, and Handling

- A. Store and handle windows and other components in strict compliance with manufacturer's instructions.
- B. Protect units against damage from the elements, construction activities and other hazards before, during, and after installation.

1.10 Warranties

- A. Total Window System
 1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation, which includes that of the windows hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc. as it relates to air, water and structural adequacy as called for in the specifications and approved shop drawings.
 2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at his expense during the warranty period.

1150S Series

2" Heavy Commercial

Thermally Improved Window

PART 2 PRODUCTS

2.01 Materials

- A. Aluminum
 - 1. Extruded aluminum shall be 6063-T6 alloy and temper, with a tensile strength of 24,000 PSI.
- B. Hardware
 - 1. Locking handles shall be cam type and manufactured from a white bronze alloy with a US25D brushed finish.
 - 2. Operating arms shall consist of 4-bar stainless steel arms or equal.
- C. Weather Strip
 - 1. All weather strip shall be double Santoprene® thermo plastic rubber or equal.
- D. Thermal Barrier:
 - 1. Poured-in-place structural thermal barrier shall transfer shear during bending and provide composite action between frame components.
 - 2. Thermal barrier pocket on aluminum extrusions shall be Azo-Braded to create a mechanical lock to improve the adhesion properties between the polyurethane polymer and the surface of the thermal barrier pocket.
 - 3. Window manufacturer must provide a warranty from the manufacturer of the polyurethane thermal barrier that warrants against product failure as a result of thermal shrinkage beyond 1/8 inch (3.2 mm) from each end and fracturing of the polyurethane for a period not to exceed ten years from the date of window manufacture.
 - 4. Thermal barrier's made of crimped in place polyamide (insulbar®) strips are not acceptable unless all strips are covered and tooled with Dow 795 silicone caulking to eliminate water migration.
- E. Insulated glass shall be () as manufactured by () consisting of () exterior, () air spacer, and () interior.

-OR-

 - 1. Monolithic glass shall be ()

2.02 Fabrication

- A. General
 - 1. All aluminum frame and vent extrusions shall have a minimum wall thickness of .125".
 - 2. Depth of main frame shall not be less than 2" with integral exterior sloped glazing leg.
 - 3. Depth of vent shall not be less than 2" with integral exterior sloped glazing leg.
- B. Frame
 - 1. Frame components shall be assembled by means of mechanical fastening with screws. Joinery to be sealed with small joint sealant
- C. Ventilator
 - 1. All vent extrusions shall be tubular on all 4 sides.
 - 2. Each corner shall be mitered and assembled by means mechanical fastening with screws. Joinery is sealed with small joint sealant.
 - 3. Each vent shall have two rows of Santoprene® weather stripping installed in a specifically designed weather strip pocket for the extrusion.
- D. Screens (**Applicable only to windows requiring screens**).
 - 1. Extruded screen frames shall be fabricated from aluminum 6063-T6.
 - a. Screen mounting holes shall be pre-drilled at the factory.
 - b. Screen mesh shall be (enter aluminum, fiberglass, or stainless steel).
 - c. Screen mesh shall be so installed that the cloth may be easily replaceable.
- E. Glazing
 - 1. All units shall be glazed with butyl tape, silicone cap bead on the exterior, with glazing vinyl and extruded snap-in aluminum glazing bead on the interior.

1150S Series

2" Heavy Commercial

Thermally Improved Window

F. Finish

1. Anodic

- a. Finish all exposed areas of aluminum windows and components with electrolytically deposited color in accordance with Aluminum Association Designation AA-M10-C22-(*). Color is to be ().

Available colors are clear, light bronze, medium bronze, dark bronze, and black.

AA Designation	Description	Mills	AAMA Guide Spec.
* A41	Class I Clear Anodized	0.7 or Greater	611-98
* A31	Class II Clear Anodized	0.4 or Greater	611-98
* A44	Class I Color Anodized	0.7 or Greater	611-98
* A34	Class II Color Anodized	0.4 or Greater	611-98

-OR-

1. Painted

- a. Finish all exposed areas of aluminum windows and components with (). Color is to be ().
 - (1) = (70% Kynar) AA-M12-C42-R1X & AAMA 2605-98 & ASCA 96
 - (4) = (50% Kynar) AA-M12-C42-R1X & AAMA 2604-98

PART 3 EXECUTION

3.01 Inspection

A. Job Conditions

1. Verify that openings are dimensionally correct and within allowable tolerances. Openings must be plumb, level, and clean. Provide a solid anchoring surface that is in accordance with approved shop drawings.

3.02 Installation

- A. Use only skilled craftsmen for work to be done in accordance with approved shop drawings and specifications.
- B. Set square and level aligning window faces in a single plane for each opening. Windows and materials must be set square and level. Adequately anchor window so when subjected to normal thermal movement, specified building movement, and specified wind loads, so windows will maintain a permanent position.
- C. Adjust Windows for proper ease of operation after installation has been completed.
- D. Contractor furnish and apply sealant, per manufacturers recommendations, to provide a weather tight installation at all opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

(Winco recommends window flashings, sub-sills and end dams on all window installations).

3.03 Protection and Cleaning

- A. After completion of window installation, windows shall be inspected, adjusted, and left in working order. Windows shall be left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the building occupant.

(Windows are a finished product and need to be treated carefully as a finished product),

Santoprene is a registered trademark of Advanced Elastomer Systems,

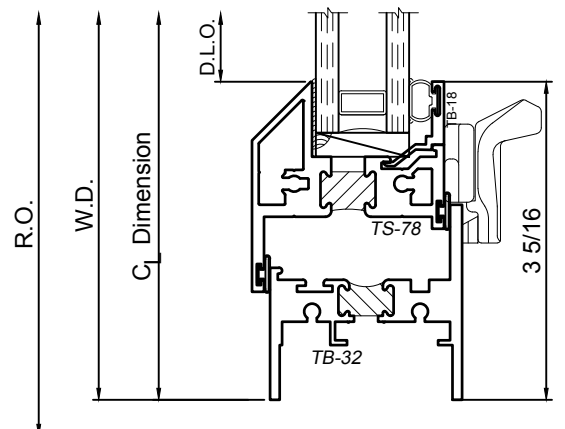
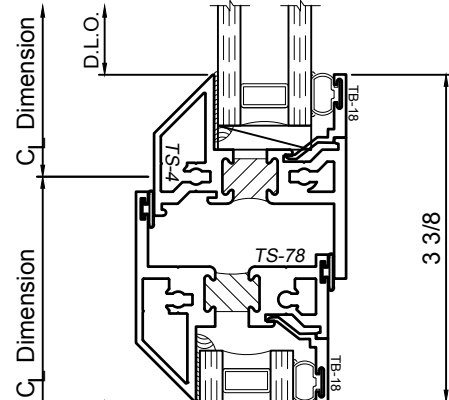
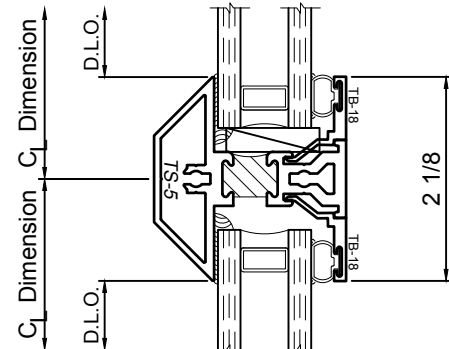
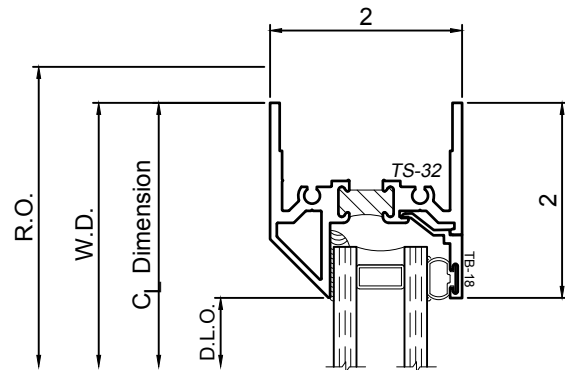
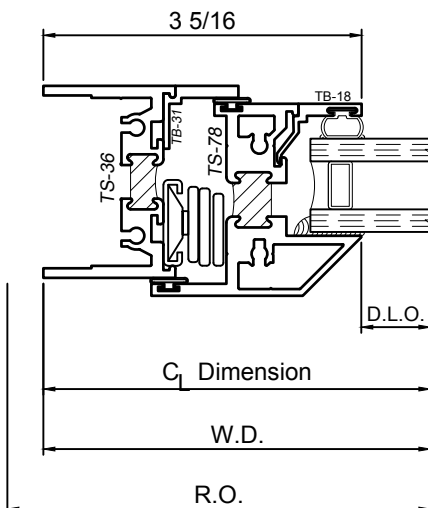
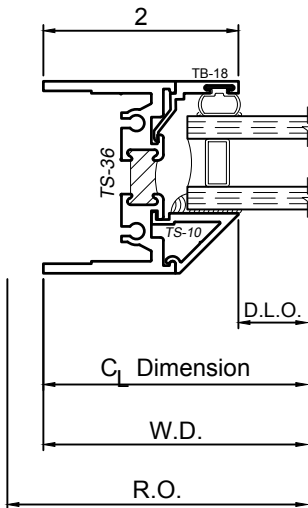
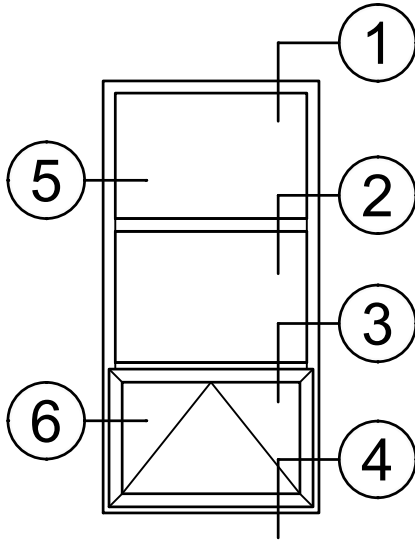
**=The above specifications are subject to change without notice.*

1150S Series 2" Thermal Fixed, Casement & Projected Windows

Product Details - Project Out - Awning



Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



1

2

3

4

5

6

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SCALE 6"=1'-0"

Hazardous Abatement

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-001 1A	ROOF-GYM	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%
0216398-002 1B	ROOF-GYM	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%

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Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-003 1C	ROOF-AWNING	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%
0216398-004 1D	ROOF-SMALL GYM	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%

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Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-005 1E	ROOF-SMALL GYM	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Perlite Binder/Filler 15%
0216398-006 1F	ROOF-LOCKERS	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%

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Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-007 1G	ROOF-LOCKERS	LAYER 1 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Membrane Core, White/ Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Membrane Core, Gray/ Beige	No	None Detected	Cellulose Fiber 85% Carbonates Gypsum Binder/Filler 15%
0216398-008 2A	ROOF-SMALL GYM	Texturing, White Bumpy	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0216398-009 2B	ROOF-LOCKERS	Texturing, Brige Bumpy	No	None Detected	Carbonates Quartz Binder/Filler 100%
0216398-010 2C	ROOF-LOCKERS	Texturing, Brige Bumpy	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%

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Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0216398-011 3A	ROOF-SMALL GYM	Caulk, Gray	No	None Detected	Carbonates Quartz Binder/Filler	100%
0216398-012 3B	ROOF-LOCKERS	Caulk, Gray	No	None Detected	Carbonates Quartz Binder/Filler	100%
0216398-013 4A	ROOF-LOCKERS	LAYER 1 Roof Flashing, Gray	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
		LAYER 2 Roof Flashing, Gray	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
0216398-014 4B	ROOF-LOCKERS	Roof Flashing, Gray	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
0216398-015 5A	ROOF-LOCKERS	Stucco Patch, White	No	None Detected	Quartz Gypsum Carbonates Mica Binder/Filler	100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-016 5B	ROOF-LOCKERS	Stucco Patch, White	No	None Detected	Cellulose Fiber <1% Quartz Gypsum Carbonates Mica Binder/Filler 99%
0216398-017 5C	ROOF-SMALL GYM	Stucco Patch, White	No	None Detected	Quartz Gypsum Carbonates Mica Binder/Filler 100%
0216398-018 6A	ROOF-LOCKERS	Penetration Mastic, Gray	No	None Detected	Cellulose Fiber 3% Fibrous Glass <1% Carbonates Quartz Binder/Filler 96%
0216398-019 6B	ROOF-LOCKERS	Penetration Mastic, Gray	No	None Detected	Carbonates Quartz Binder/Filler 100%
0216398-020 7A	ROOF-GYM	LAYER 1 Roof Material, Gray	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Material, Gray	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%

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Laboratory Report

0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-021 7B	ROOF-LOCKERS	LAYER 1 Roof Material, Gray	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Material, Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 3 Roof Material, Black	No	None Detected	Fibrous Glass 40% Carbonates Quartz Binder/Filler 60%
		LAYER 4 Roof Material, Gray/ Beige	No	None Detected	Cellulose Fiber 95% Gypsum Quartz Binder/Filler 5%
0216398-022 7C	ROOF-SMALL GYM	LAYER 1 Roof Material, Gray	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Roof Material, Gray	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
0216398-023 8A	ROOF-LOCKERS	Penetration Mastic, Black	No	None Detected	Fibrous Glass 1% Carbonates Quartz Binder/Filler 99%
0216398-024 8B	ROOF-LOCKERS	Penetration Mastic, Black	No	None Detected	Fibrous Glass <1% Carbonates Quartz Binder/Filler 99%

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Laboratory Report

0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-025 9A	ROOF-LOCKERS	Duct Sealant, White	No	None Detected	Carbonates Quartz Binder/Filler 100%
0216398-026 9B	ROOF-LOCKERS	Duct Sealant, White	No	None Detected	Cellulose Fiber Carbonates Quartz Gypsum Binder/Filler 99%
0216398-027 10A	ROOF-LOCKERS	Vibration Skirt, White	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler 60% 40%
0216398-028 11A	ROOF-LOCKERS	Texturing On Penetration, Silver	No	None Detected	Carbonates Quartz Binder/Filler 100%
0216398-029 11B	ROOF-LOCKERS	Texturing On Penetration, Silver	Yes	Chrysotile 3%	Carbonates Quartz Binder/Filler 97%
0216398-030 11C	ROOF-LOCKERS	Texturing On Penetration, Silver	Yes	Chrysotile 3%	Carbonates Quartz Binder/Filler 97%
0216398-031 12A	ROOF-SMALL GYM	Window Putty, Gray	Yes	Chrysotile 2%	Cellulose Fiber Carbonates Quartz Binder/Filler 1% 97%

EMC LABS, INC.

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Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-032 12B	ROOF-SMALL GYM	Window Putty, Gray	Yes	Chrysotile 2%	Cellulose Fiber 1% Carbonates Quartz Binder/Filler 97%
0216398-033 12C	ROOF-LOCKERS	Window Putty, White	No	None Detected	Carbonates Quartz Binder/Filler 100%
0216398-034 12D	ROOF-LOCKERS	Window Putty, White	Yes	Chrysotile 2%	Carbonates Quartz Binder/Filler 98%
0216398-035 12E	ROOF-LOCKERS	Window Putty, White	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0216398-036 13A	ROOF-LOCKERS	Transite Flue, Gray	Yes	Chrysotile 30%	Gypsum Carbonates Quartz Binder/Filler 70%
0216398-037 14A	ROOF-SMALL GYM	Caulk, Gray	Yes	Chrysotile 5%	Carbonates Quartz Binder/Filler 95%
0216398-038 14B	ROOF-LOCKERS	Caulk, Gray	Yes	Chrysotile 5%	Carbonates Quartz Binder/Filler 95%

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Laboratory Report
0216398

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	M3 ENVIRONMENTAL CONS.	Job# / P.O. #:	19109.0 T1
Address:	9821 BLUE LARKSPUR LN, STE 100	Date Received:	03/05/2019
	MONTEREY CA 93940	Date Analyzed:	03/08/2019
Collected:	03/04/2019	Date Reported:	03/08/2019
Project Name:	SCCS-MISSION HILL ELEM.-GYM	EPA Method:	EPA 600/R-93/116
Address:	ROOF-ACM/Pb	Submitted By:	ALEX SUPERKO
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0216398-039 14C	ROOF-LOCKERS	Caulk, Gray	Yes	Chrysotile 5%	Carbonates Quartz Binder/Filler 95%



Analyst - James A. Storm



Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

CHAIN OF CUSTODY

EMC Labs, Inc.
9830 S. 51ST St., Ste B-109
Phoenix, AZ 85044

(800) 362-3373 Fax (480) 893-1726

LAB#: 216398
TAT: 3 days
Rec'd: MAR 05 AM.

COMPANY NAME:	M3 Environmental Cons.
	9821 Blue Larkspur Ln, Ste 100
	Monterey, CA 93940
CONTACT:	Alex Superko
Phone/1st.2nd :	(831) 917-0797 / (831) 649-4623
Email:	Alex @m3environmental.com

BILL TO: (If Different Location)

Now Accepting: VISA – MASTERCARD

Price Quoted: \$_____ / Sample \$_____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. TURNAROUND TIME: [4hr rush} [8hr rush} [1-Day] [2-Day] [3-Day] [5-Day] [6-10 Day]

******Prior confirmation of turnaround time is required**

****Additional charges for rush analysis (please call marketing department for pricing details)

****Laboratory analysis may be subject to delay if credit terms are not met

2. TYPE OF ANALYSIS: ☒ [Bulk-PLM] ☐ [Air-PCM] ☐ [Lead] ☐ [Point Count] ☐ [Fungi: AOC, W-C, Bulk, Swab, Tape]

3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]
(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. Project Name: SCCS - Mission Hill Elementary - Gym Roof - ACM/Pnb

P.O. Number: _____ **Project Number:** 19109.0 - T1

[illegible]

SPECIAL INSTRUCTIONS:

Sample Collector: (Print) Alex Superko

(Signature

Relinquished by: [Signature] Date/Time: 3/4/19 Received by: Diana Federico Date/Time: 3/5/19

Relinquished by: Diana Federico Date/Time: 3/5/19 Received by: [Signature] Date/Time: 3/7/19

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

**** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.**

216398



ENVIRONMENTAL
CONSULTING LLC

Asbestos Bulk Sampling Log

Client: SCCS
Project Name: ACM/Pb
Site Address: Mission Hill Elementary
Building: Gym - Roof
Project No.: 13109.0 - T1

Sample Date: _____
Inspector: Alex Superko
CAC No. _____
SST No. 13-5062

Sample No.	Building / Floor	Area No.	Area Name	Material Description	Estimated Quantity			Notes
					SF	LF	EA	
1 1A	Roof		Gym ↓	Grey comp RR				
2 1B								
3 1C			Awning					
4 1D			small gym ↓					
5 1E								
6 1F			Lockers ↓					
7 1G								
8 2A			small gym	Bumpy texturing on Stucco				overspray on flashing & framing
9 2B			Lockers ↓					
10 2C	↓							

21639D



ENVIRONMENTAL
CONSULTING LLC

Asbestos Bulk Sampling Log

Client: SCCS
Project Name: ACM/Pb
Site Address: Mission Hill Elementary
Building: Gym - Roof
Project No.: 13109.0 - T1

Sample Date: _____
Inspector: Alex Superko
CAC No. _____
SST No. 13-5062

Sample No.	Building / Floor	Area No.	Area Name	Material Description	Estimated Quantity	Notes
11 3A	Roof		Small Gym	Gray Gutter Caulk	SF LF EA	
12 3B			Lockers		SF LF EA	
13 4A				Gray comp RR Flashing	SF LF EA	
14 4B					SF LF EA	
15 5A				White Stucco Patch	SF LF EA	@ ends of Flashing
16 5B					SF LF EA	
17 5C			Small Gym		SF LF EA	
18 6A			Lockers	Gray Penetration Mastic	SF LF EA	
19 6B					SF LF EA	
20 7A			Gym	Black comp RR	SF LF EA	



ENVIRONMENTAL
CONSULTING LLC

Asbestos Bulk Sampling Log

Client: SCCS

Project Name: ACM/Pb

Site Address: Mission Hill Elementary

Building: Gym - Roof

Project No.: 13109.0-T1

Sample Date: _____

Inspector: Alex Superko

CAC No. _____

SST No. 13-5062

Sample No.	Building / Floor	Area No.	Area Name	Material Description	Estimated Quantity				Notes
					SF	LF	EA		
21/7B/c	Roof		Lockers	Black comp RP					
22			Lockers	Black penetration mastite					
23									
24									
25				White duct sealant					
26									
27				White vibration skirt					
28				Bumpy texturing on penetration					
29									
30									
31			Small Gym	Window putty					



**ENVIRONMENTAL
CONSULTING LLC**

Asbestos Bulk Sampling Log

Client: **SCCS**

Client: SCCS
Project Name: ACM/Pb

Site Address: Mission Hill Elementary

Building:

Project No.: 13109.0 - T1

Sample Date:

Inspector:

CAC No.

SST No. 13-5062

Sample No.	Building / Floor	Area No.	Area Name	Material Description	Estimated Quantity	Notes
12B	Roof		Small 6x4m	Window Putty	SF LF EA	
12C			lockers		SF LF EA	
12D					SF LF EA	
12E					SF LF EA	
13A				Transie flw	SF LF EA	
14A			Small 6x4m	Window frame caulk	SF LF EA	
14B			lockers		SF LF EA	
14C					SF LF EA	
					SF LF EA	
					SF LF EA	

CHAIN OF CUSTODY

EMC Labs, Inc.
9830 S. 51ST St., Ste B-109
Phoenix, AZ 85044
(800) 362-3373 Fax (480) 893-1726

LAB#: 873946
TAT: 3-days
Rec'd: 3/5/19

COMPANY NAME: M3 Environmental Cons.
9821 Blue Larkspur Ln, Ste 100
Monterey, CA 93940
CONTACT: Alex Superko
Phone/fax: (831) 917-0797 / (831) 649-4623
Email: Alex@m3environmental.com

BILL TO: (If Different Location)

Now Accepting: **VISA - MASTERCARD**

Price Quoted: \$ ____ / Sample \$ ____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)**1. TURNAROUND TIME:** [4hr rush] [8hr rush] [1-Day] [2-Day] [3-Day] [5-Day] [6-10 Day]****Prior confirmation of turnaround time is required

****Additional charges for rush analysis (please call marketing department for pricing details)

****Laboratory analysis may be subject to delay if credit terms are not met

2. TYPE OF ANALYSIS: [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]**3. DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]
(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)**4. Project Name:** SCCS - Mission Hill Elementary - Gym Roof - ACM/PnbP.O. Number: _____ Project Number: 19109.0 - T1

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No	AIR SAMPLE INFO / COMMENTS ON OFF FLOW RATE		
<u>1</u>	<u>1</u>	<u>3/4</u>		<u>Y</u> N			
<u>5</u>	<u>5</u>	<u>1</u>		<u>Y</u> N			
<u>10</u>	<u>10</u>			<u>Y</u> N			
	<u>M3</u> Please See Attached Log			<u>Y</u> N			
	<u>ACM</u>			<u>Y</u> N			
	<u>ENVIRONMENTAL</u>			<u>Y</u> N			
	<u>CONSULTING LLC</u>			<u>Y</u> N			
	<u>PD</u>			<u>Y</u> N			
		<u>3/4/19</u>		<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			
				<u>Y</u> N			

SPECIAL INSTRUCTIONS:Sample Collector: (Print) Alex SuperkoRelinquished by: [Signature] Date/Time: 3/4/19 Received by: [Signature] Date/Time: 3/5/19Relinquished by: [Signature] Date/Time: 3/5/19 Received by: [Signature] Date/Time: 3/5/19

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.



Client: SCCS

Project Name: ACM/Pb Roof
Site Address: Mission Hill Elementary School
Building: Gym
Project No.: 19109.0 - T1

Sample Date: _____
Inspector: Alex Superko
CDPH No. 25105

Lead Bulk Sampling Log

Sample No.	Color	Substrate	Building Component	Sample Location (Interior/Exterior)	Notes
L1	Beige	Stucco	wall	Roof	
L2	Beige	metal	downspout		
L3	Beige	wood	eave		
L4	Green	wood	window		
L5	Beige	wood	fascia		
L6	white	metal	penetration		
L7	Green	metal	downspout		
L8	metal	metal	flashing		
L9	White	metal	pipe		
L10	Green	wood	fascia		

73946



9830 South 51st Street, Suite B-109 / PHOENIX, ARIZONA 85044 / 480-940-5294 or 800-362-3373 / FAX 480-893-1726
emclab@emclabs.com

LEAD (Pb) IN PAINT CHIP SAMPLES
EMC SOP METHOD #L01/1 EPA SW-846 METHOD 7420

EMC LAB #: L73946			DATE RECEIVED: 03/05/19		
CLIENT: M3 Environmental Consulting			REPORT DATE: 03/08/19		
			DATE OF ANALYSIS: 03/08/19		
CLIENT ADDRESS: 9821 Blue Larkspur Lane, Suite 100 Monterey, CA 93940			P.O. NO.:		
PROJECT NAME: SCCS-Mission Hill Elementary-Gym Roof-ACM/Pnb			PROJECT NO.: 19109.0-T1		


EMC # L73946-	SAMPLE DATE /19	CLIENT SAMPLE #	DESCRIPTION	REPORTING LIMIT (%Pb by weight)	%Pb BY WEIGHT
1	03/04	L1	Beige/Stucco/Wall/Roof	0.010	BRL
2	03/04	L2	Beige/Metal/Downspout/Roof	0.010	0.014
3	03/04	L3	Beige/Wood/Eave/Roof	0.10	1.59^
4	03/04	L4	Green/Wood/Window/Roof	0.014	1.34
5	03/04	L5	Beige/Wood/Facia/Roof	0.10	2.33^
6	03/04	L6	White/Metal/Penetration/Roof	0.013	0.060
7	03/04	L7	Green/Metal/Downspout/Roof	0.016	0.116
8	03/04	L8	Metal/Metal/Flashing/Roof	0.10	6.82^
9	03/04	L9	White/Metal/Pipe/Roof	0.052	BRL
10	03/04	L10	Green/Wood/Facia/Roof	0.010	1.05

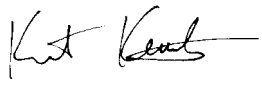
^ = Dilution Factor Changed * = Excessive Substrate May Bias Sample Results **BRL** = Below Reportable Limits # = Very Small Amount Of Sample Submitted, May Affect Result

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. Unless otherwise noted, all quality control analyses for the samples noted above were within acceptable limits.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of sixty (60) days.

ANALYST: 
Jason Thompson

QA COORDINATOR: 
Kurt Kettler

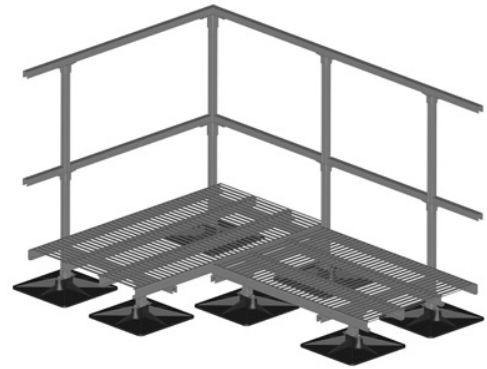
Walkway Specification and Technical Information Cutsheet

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WALKWAY

SPECIFICATION & TECHNICAL INFORMATION SHEET



DESCRIPTION:

The PHP Walkway is designed to prevent and direct any traffic on the roofing system. It is specifically designed to be installed directly on the roof without penetrations, flashings, or damage to the roofing system.

INSTALLATION PROCEDURE:

Before Installation

- 1** | Determine spacing of substructures.
- 2** | Sweep loose gravel away, if gravel exists.
- 3** | Isolation pads:
 - a. Must be compatible with existing roof or new roof system being installed, (check with manufacturer).
 - b. Need not be adhered to roofing membrane.
- 4** | Alignment of substructures:
 - a. Splice Assembly – Used to join one 20' span of planking to another.
 - b. Straight Assembly – Intermediate support between splices. The quantity will depend on the weight to be supported and distributed.
 - c. Corner Assembly – Can be right or left turn.
- 5** | Handrails:
 - a. If handrails are required, the hardware for attaching said handrail will have been installed at the factory, and the intermediate rail will have been cut to size.
 - b. For ease of installation, the top handrail will come in 20' lengths.

Installation

- 1** | Layout isolation pads, (provided by contractor), according to the design and layout.
- 2** | Place bases on isolation pads and insert legs of substructures.
- 3** | Lay out planking, make whatever minor adjustments are needed, (spacing of substructures to accommodate the intermediate handrail, if required), and install hold-downs.
- 4** | Place the handrails on top of the factory-installed hardware and secure with channel nuts and hex head cap screws

STORAGE:

Store in the original, unopened containers, under cover, until needed for installation.

LEED INFORMATION:

Frame/Steel

Post Consumer Recycled Content: 0%

Post Industrial Recycled Content: 25%

BASE MATERIAL:

Post Consumer Recycled Content: 80%

Post Industrial Recycled Content: 20%

Manufacturing Location: Houston, TX

PRODUCT DATA:

Property:

Base:

Base Material:

Base Color:

Base Density:

Minimum Performance:

Injection molded high density/high impact polypropylene with UV-inhibitors and Antioxidants
Black

55.8 lb/cu ft (894 kg/cu m)

Carbon Steel and 304 Stainless Steel Framing:

Channel Types: 1-5/8" (41.3 mm) or 1-7/8" (47.6 mm) as required by loading

Form: Roll-formed 3-sided tubular shape, perforated with 9/16" (14.3 mm) holes at 1-7/8" (47.6 mm) centers on three sides

Thickness: 12 gauge (2.7 mm)

Carbon Steel Finish: Hot dip galvanized per ASTM A 123

Stainless Steel Finish: Mill Finish

Surface:

Type: Walkway Planking 18-ga. steel

Section Width X Height: 12" x 2.5"

Flange Options: FM and MM

Surface Condition: MG-traction grip

Carbon Steel Finish: Hot dip galvanized per ASTM A 123

Type: Bar grating type WB-4, Carbon Steel

Section Width as required

Bar Grating Height: 1"

Surface Condition: Serrated

Carbon Steel Finish: Hot dip galvanized per ASTM A 123

Lighting Fixture Specification Cutsheet

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Survive-All™ SV Series

NEMA-4X, NSF, vandal-resistant housing – 6V-18W & 12V up to 60W capacities



nexus NEMA-4X



Housing

- Full gasketed NEMA-4X housing
- Vandal-resistant UV stabilized polycarbonate cover
- Comes with both Phillips head for NSF location and tamper-proof screws

Mounting

- Universal J-box mounting
- Strut or I-beam installation bracket sold separately (order catalog number: PMK-E)

Lamp type

- Choice of MR16 LED lamp wattages

Electronics

- Pulse plus charger
- Low voltage disconnect
- Automatic brownout protection
- Battery lock-out
- Fused output circuit
- Magnetic test switch
- Standard Advanced Diagnostics (non-audible)
- Standard 15 minutes time delay
- Optional Nexus® monitoring system
- 120/277 60Hz

Choice of battery

- 6V or 12V lead-calcium battery
- 12V nickel-cadmium battery
- 12V nickel-metal hydride battery

Approvals

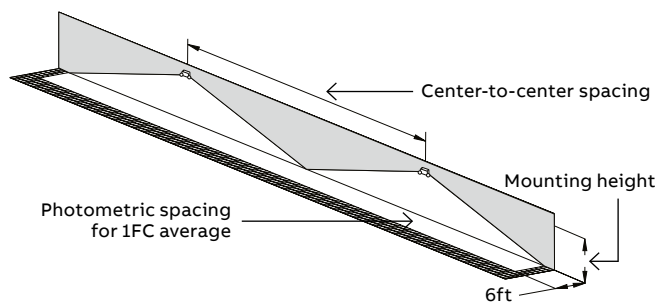
- UL 924 listed
- UL listed for wet and damp location (50°F to 104°F)
- UL listed for cold weather option (-40°C to +40°C/-40°F to +104°F)
- NSF certified for use in food processing plants
- NEMA-4X rated

Warranty

- Unit has a five-year limited warranty
Detailed warranty terms located on page 178 or online at:
www.emergi-lite.com/usa/files/EL_Warranty.pdf

Photometric performance

Lamp	Spacing center-to-center (feet)	
	7' mounting height	15' mounting height
LA	39'	34'
LG	49'	39'
LI	68'	54'
LJ	89'	80'



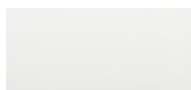
Housing color



Black



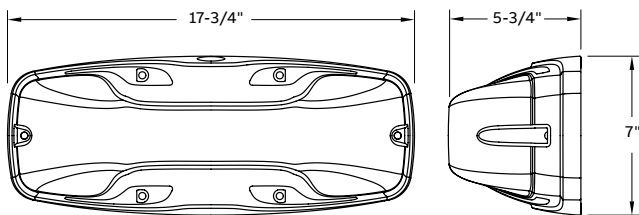
Gray



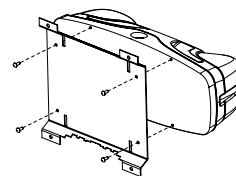
White

Dimensions

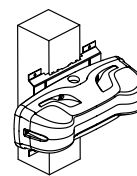
Dimensions are approximate and subject to change.



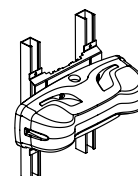
Universal bracket



PMK kit (screws included)



Beam mounting



Strut mounting

Unit rating - equipment with remote capability

Sealed maintenance-free battery types	Battery capacity in watts			
	1-1/2 hrs	2 hrs	3 hrs	4 hrs
Lead-calcium	18	12	8	–
	24	16	12	8
	36	24	20	14
	54	36	27	20
Nickel-cadmium	24	18	12	8
	40	27	20	14
Nickel-metal hydride	60	40	30	20

Accessories (order as a separate item)

Description	Part number
Additional special bit for tamper-proof screws	690.0454-E
Universal bracket (for mounting on poles, I-beams or strut metal framing)	PMK-E

How to order

Color	Series	# of lamps	Lamps	Diagnostics	Options
B= Black	Lead-calcium	-2= 2 Lamps	LA= 6V-4W, MR16 LED	-DA= Advanced Diagnostics (audible) ²	Blank= No options
G= Gray	SV18M= 6V-18W lead-calcium		LG= 12V-4W, MR16 LED	-D= Advanced Diagnostics (non-audible) ²	CW4= Cold weather -40°F to 104°F (-40°C to +40°C) ³
W= White	12SV24M= 12V-24W lead-calcium		LI= 12V-5W, MR16 LED	-NEX= Nexus® wired (contact your sales representative) ²	-SMC= Surface ceiling mount
	12SV36M= 12V-36W lead-calcium		LJ= 12V-6W, MR16 LED	-NEXRF= NEXUS® wireless (contact your sales representative) ²	
	12SV54M= 12V-54W lead-calcium				
	Nickel-cadmium				
	12SV24N= 12V-24W nickel-cadmium ¹				
	12SV40N= 12V-40W nickel-cadmium ¹				
	Nickel-metal hydride				
	12SV60H= 12V-60W NiMH ¹				

Example: B12SV36M-2LG-DCW4

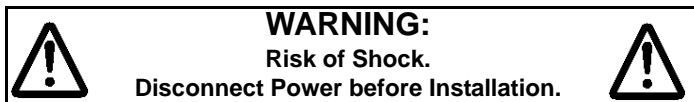
¹Suitable for damp-locations 50°F to 104°F (10°C to 40°C)

²Minimum lamp load: 20% of unit capacity

³Only available with: 12SV24M & 12SV36M and NEX & NEXRF 12SV24M & 12SV36M

Survive-All™ –SV Series

Emergency Light unit



IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. All servicing should be performed by qualified service personnel.
2. All unused wires must be insulated to prevent shorting.
3. Do not let power supply cords touch hot surfaces.
4. Do not mount near gas or electric heaters.
5. Use caution when handling batteries. Battery acid can cause burns to the skin and eyes. If acid is spilled on the skin or eyes, flush affected area with fresh water and contact a physician immediately.
6. Avoid possible shorting.
7. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
8. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
9. Do not use this equipment for other than intended use.
10. Unit to be installed only as per configuration described in this instruction manual.

SAVE THESE INSTRUCTIONS

Installation Instructions

WARNING:

RISK OF PERSONAL INJURY AND UNIT DAMAGE. DO NOT INSTALL THIS UNIT ON A CEILING. PRODUCT WARRANTY IS VOID IF INSTALLED ON A CEILING.

IMPORTANT:

Install fixture/lamp type combination no higher than the maximum mounting heights as stipulated in the "Lamp Mounting Height Cross-reference Table" (P/N 750.1924). Refer to "Technical Information" section of our website.

1. Turn off unswitched AC power.
2. Open clear cover by removing the screws.
3. Remove the electronic module. Pull on the cover until snapping features disengage or use a screw driver by inserting it into the slots shown in figure 13 and prying the cover open.
4. Remove the battery(ies) in order to access the knockouts.
5. Install back plate.

Wall mounting on a junction (figure 2)

- a. Route unswitched AC circuit wires knockout into the junction box and leave 6" of wire length.

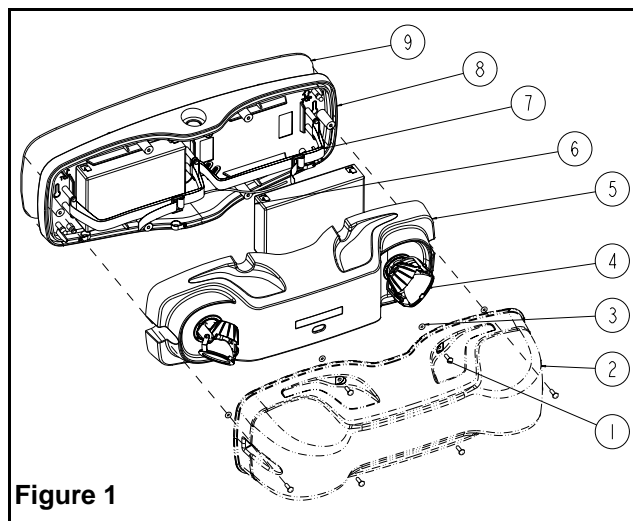


Figure 1

Parts List

- | | |
|--|---------------------------------|
| 1. Tamper-proof screws OR Slot head screws for food processing facilities use only (6) | 7. Battery strap or bracket |
| 2. Clear cover | 8. Backplate |
| 3. O-ring | 9. Gasket |
| 4. Lamps | 10. AC harness |
| 5. Electronic module | 11. Ground wire |
| 6. Battery | 12. Wire nut |
| | 13. J-box (not supplied) |
| | 14. J-box screws (not supplied) |

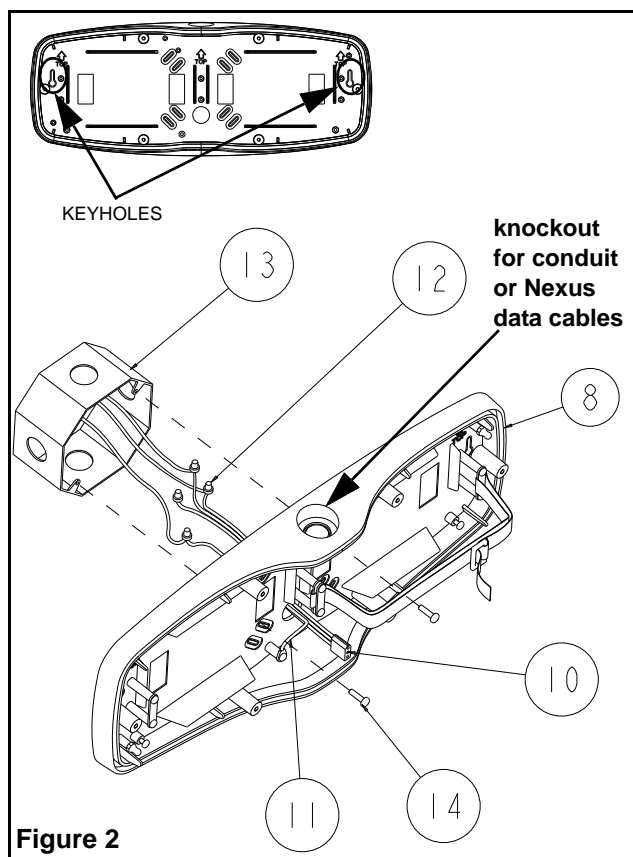


Figure 2

- b. Remove the knockouts needed to mount back plate. Considering the weight of the unit, it's recommended to use the keyholes for additional securing. For Nexus option, install the liquidtight® fitting, provided with the unit, on the backplate. Use the knockout located on the top or bottom of the unit.
- c. Remove AC harness from electronic module. Wire to AC circuit wires using wire nuts (see figure 2). Refer to hookup instructions on page 2.
- d. Install the gasket on the back plate. Feed AC harness and the ground through the large hole in the backplate (see figure 2). Mount to J-box using the J-box screws (not provided). J-box should be properly secured directly to a stud.

Note: When back mounting the unit on an uneven surface such as brick, silicone caulking should be used to prevent water from seeping in between the unit and the J-box.

Wall mounting with conduit

- a. Remove knockout on top of the backplate for conduit entry and keyhole knockouts to fix the backplate to the wall. For Nexus option, install the liquidtight® fitting, provided with the unit, on the bottom of the backplate. Don't route data cables with AC wires.
- b. Install a liquidtight® conduit fitting on the backplate. Conduit size: 1/2" NPT (not provided).
- c. Install the unit on the wall using screws (not provided).
- d. Connect the conduit to fitting and route unswitched AC circuit wires into the unit.
- e. Remove AC harness from electronic module. Wire to AC circuit wires using wire nuts. Refer to hookup instructions.

Pole or I-beam mounting (Option)

- a. Universal bracket (part 16 on figure 4) is an accessory and needs to be ordered separately. Remove knockout on top of the backplate for conduit entry.
- b. Install a liquidtight® conduit fitting on the backplate. Conduit size: 1/2" NPT (not provided).
- c. Install the universal bracket as shown in figure 4. Don't install the gasket (9). This type of installation is not NSF certified for food processing areas.
- d. Unit can be installed using steel banding for routing around the poles and I-beam. Standard banding 3/4" in width or less can be used (not provided). It can also be mounted on a Superstrut® metal framing (1 5/8" channel series) using 1/4" bolt (not provided). Holes are placed at 9" apart horizontally.
- e. Connect the conduit to fitting and route unswitched AC circuit wires into the unit.
- f. Remove AC harness from electronic module. Wire to AC circuit wires using wire nuts. Refer to hookup instructions.

Note: If the unit is to be mounted vertically (see fig. 5), the position of the lowest lamp must be at a minimum height of 7 feet 3 inches from floor level to respect the standardized light distribution.

6. Complete electrical connection:

Standard product:

- a. Reinstall battery(ies) one at a time and electronic module as shown in figure 6. See figure 7 for batteries wiring diagram.
- b. Connect transformer harness to AC harness.

INSTRUCTIONS - HOOKUP

- 120 VAC OPERATION -

White wire - Common
Black wire - 120V Line
Green wire - Ground

- 277 VAC OPERATION -

White wire - Common
Orange wire - 277V Line
Green wire - Ground

Note: Secure AC wires via wire clip after having completed connections.

Unused primary wire must be insulated to prevent shorting.
Primary wire connections must be isolated from charger.

To ensure watertightness:
install the o-ring
inside the unit, as shown.

Put the screw in the lens
hole and then install the
o-ring.

Figure 3

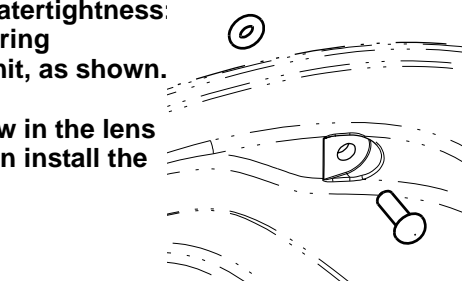


Figure 4

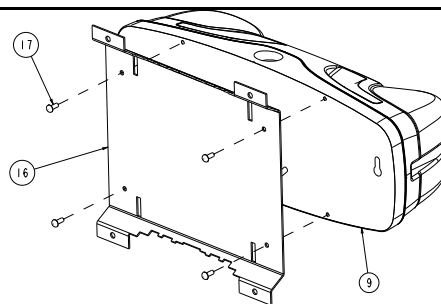


Figure 5

Lowest lamp must be
at a minimum height of
7 feet 3 inches from
the floor.

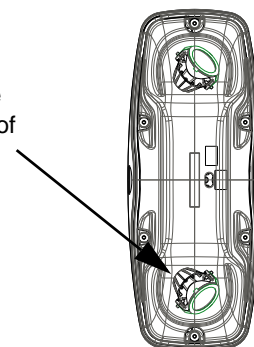
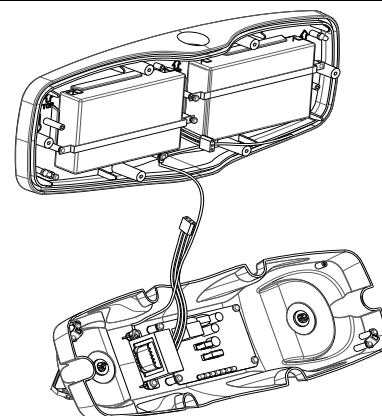


Figure 6



Cold weather option:

- Install the gasket on the back plate.
- Connect battery heater (18) to thermostat (19) and to AC harness (10) (see figure 8).
- Refer to figure 9 for 120VAC input voltage and to figure 10 for 277VAC. Use wire taps provided with the hardware kit to connect battery heater.
- Install to mounting surface.
- Place the battery(ies) back in place one at a time, secure each battery with a battery bracket and screws. Battery heater is placed between the battery and the backplate. See figure 7 for battery(ies) wiring diagram. Put the electronic module back in place as shown in figure 6.
- Connect transformer harness to AC harness.

NOTE: Secure AC wires via wire clip after having completed the connections.

NOTE: For connections related to Nexus system, refer to the Nexus Addendum.

- For unit with remote capacity, connect remote heads to terminal block TB1 (see figure 12).
 - Snap electronic module on backplate.
 - Adjust lamp aiming.
 - Install the lens by using the 6 tamper-proof screws (1). To insure water tightness, o-rings (3) have to be installed from the inside (see figure 3).
- The tamper-proof screws should be equally torqued to approximately 10 - 15 in-lbs (1.1 - 1.7 N-m).**
- If the installation is done in a food processing area, see section: (Food processing facilities).
- Energize AC. Lamps will turn on for few minutes.
 - See page 4 for testing procedure.

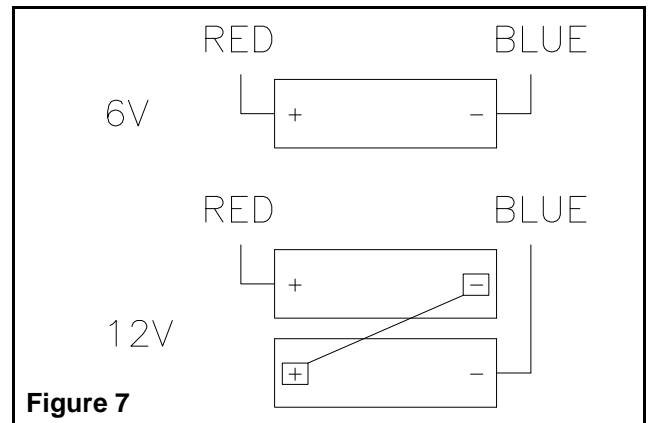


Figure 7

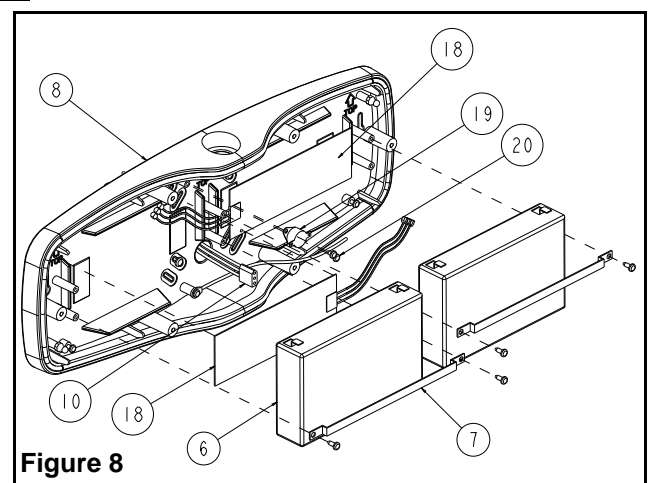


Figure 8

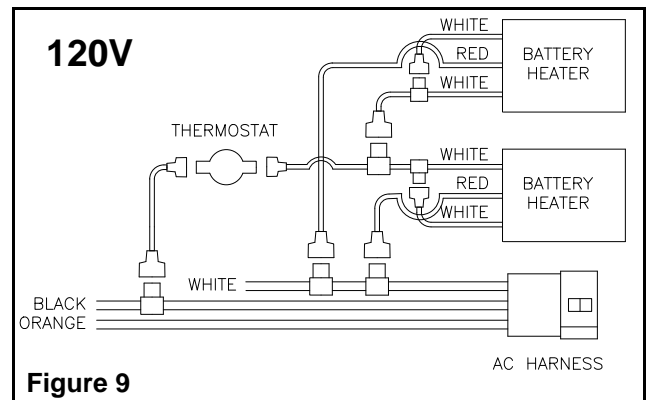


Figure 9

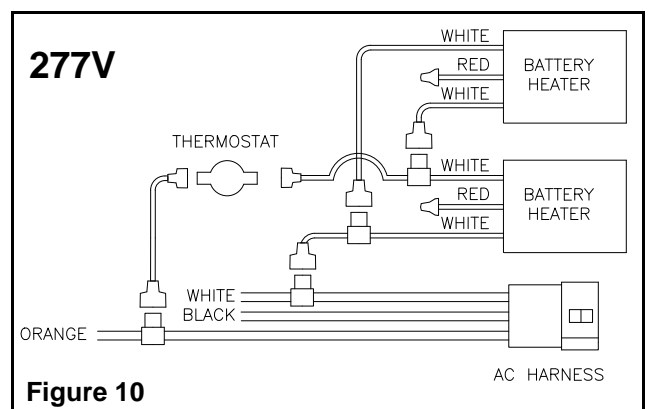


Figure 10

FOR COLD WEATHER
OPTION ONLY

Manual Testing

Operate the magnetic “test switch” by holding the provided magnet near the AC pilot lamp, where indicated. This will initiate a one minute test. The DC lamps will illuminate for approximately one minute, then the unit will automatically return to stand by mode. Test can be cancelled by holding the magnet near the test switch again.

Automatic Testing (AD charger)

The unit will perform an automatic self-test of 1 minute every month, 30 minutes every 6 month and a 90 minutes self-test once a year.

Automatic Diagnostics (AD charger)

There are five diagnostic indicators: one external and four internal. Unit must be opened to gain access to internal indicators.

External: General alarm, “Service Required”. The LED will turn-on if any alarm condition is detected (see figure 11).

Internal: Battery Failure, Battery Disconnect, Charger Failure & Lamp Failure. Steady ON if alarm condition exists. (see figure 12).

Normal operation, No fault — “Service Required” is OFF.

Faulty operation — “Service Required” is ON.

(See fig. 11).

(see AD charger owner manual for more details)

Default setting (AD charger)

Unit is factory preset with a 15 minutes time delay and a non audible diagnostic. This setting can be changed to either turn off the time delay or turn on the audible diagnostic. See AD charger owner manual for more details.

NEXUS Option

Unit equipment having the Nexus interface have 2 external indicators and 3 internal.

External: — (see figure 11)

AC ON (green): Illuminated when line voltage is present.

Nexus (tricolor LED): See Nexus Addendum for details.

Internal: See Nexus Addendum for details.

Food processing facilities

To comply with NSF requirements the following steps must be respected:

1. Install unit on a flat surface to ensure watertightness and avoid any gaps between the gasket and the wall.
2. The backplate must be mounted with the knockout and keyholes facing down (see fig.14). If the keyholes are used to mount the backplate to the wall, washers must be installed over the screws to ensure the backplate will not disengage from the screws.
3. If applicable plug the quick connect wires together.
4. Reinstall the electronic module as shown in figure 15.
5. Tamper-proof screws must be removed from the lens and replaced with the slot head screws provided.

Note: some detergents used in the food processing industry can affect the durability of the polycarbonate lens.

Maintenance (All Models)

None required. If AC supply to the unit is to be disconnected for 2 months or more, the battery must be disconnected.

Warranty: For the complete warranty information, please refer to the landing page of our website (<http://www.emergi-lite.com/usa/>).

