SECTION 00 91 01

ADDENDUM NO. 1

SUMMARY

This document includes requirements that clarify or supersede portions of the Project Manual. This Addendum is a Contract Document.

General

The following changes, additions and deletions shall be made to the following document(s); all other conditions shall remain the same. Bidders are to review the referenced documents to confirm the full extent of the changes and clarifications listed below.

I. SPECIFICATIONS

Item No.	Reference	Description
A.	Document 00 01 10	Table of Contents V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. Changes include: 00 91 01 Addendum No. 1 – added 01 22 00 Unit Prices – added 02 41 22B Selective Demolition (SKY B14 only) – deleted 06 10 00B Rough Carpentry (SKY B14 only) – deleted 07 62 00B Sheet Metal Flashing & Trim (SKY B14 only) - deleted
B.	Document 00 01 15	List of Drawings V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. List of Drawings V.2 replaces all project drawings dated April 2, 2015 with project drawings identified as Addendum #1 and dated April 16, 2015.
C.	Document 00 11 19	Instructions to Bidders V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. Changes Include: Paragraph 1: "**RECEIPT OF BIDS. Sealed Bids will be received by the District at their office (see paragraph 2 below) no later than 2:00 pm, on MONDAY, APRIL 27, 2015.**" (Location remains the same.) Paragraph 6: Document 00 73 17 OCIP Qualification Form is removed as a required bid form. ~~This form is not required.~~
D.	Document 00 41 00	Bid form V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015.

		Changes include: Unit Pricing and Work Allowances for walkway pads, plywood substrate, roof drains, and Facia are added to the bid form. Paragraph 5 is changed to state: "The low bid will be determined by the sum of Bid Items #1 through 10." Paragraph 6.1 is added: "Unit pricing – the unit price amounts entered in the "Unit Price" column of lines 4, 6, 7, 8, and 9 of the Bid Form, must be utilized to calculate the "Work Allowance" entered in the "Total" column. These unit price values will become the contractual basis for additive and deductive modifications to the Contract Sum per Section 01 22 00 Unit Prices. The individual Unit Price values will not be used to determine the low bid. Paragraph 6.2 is added: "Work allowance - the sums entered in the "Total" column as the specific total for line items 4, 6, 7, 8, and 9 will be awarded with the contract. These funds will be drawn from the individual Work Allowance only by approval of the Owner and authorization of Change Orders by the Construction Manager and Engineer of Record per Section 01 29 00 (Measurement and Payment), Section 01 22 00 (Unit Prices) and Section 00 41 00 (Bid Form). The Work Allowance will be used to determine the low bid, per item 5 of this section. The amount entered on line 11 of the Bid Form WILL BE AWARDED."
	Document 00 52 00	Agreement V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. Changes include: The following documents are added to Article 6.1 Contract Documents: Section 01 21 00 Allowance Section 01 22 00 Unit Prices
E.	Document 00 73 17	Insurance V.1 dated April 20, 2015 is added to the project manual.
F.	Section 01 10 00	Summary of Work V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. Changes include: Paragraph 1.2.B.1.a.1. and 1.2.B.1.a.6. are removed in their entirety. The mechanical on the Building 1 roof will remain. Paragraph 1.2.B.1.a.3.b. is added- "4/17/15 additional sampling determined the caulking along the metal edging at the top of the clear story also contains asbestos." Paragraph 1.2.B.1.a.9 is added – "Contractor is to complete all work necessary to roof up to, around or under existing mechanical units per plans and specifications. Contractor is to coordinate

		efforts with the Construction Manager to minimize the down time of the HVAC units that supply air to occupied spaces." Paragraph 1.2.B.2.a.2. has been modified to state: "It's imperative that construction materials are not left behind and the clean-up process/quality assurance includes tarping playground structures/sand box and daily cleaning of the area. Contractor is obligated to perform daily clean-up of entire grounds to remove all construction related debris, scraps, nails, materials, etc. Prior to facility re-opening Contractor is obligated to perform a final walk through with a magnet sled to ensure all metal debris, as well as previously identified items, are removed from the play yards, perimeters and entrance areas. District personnel will inspect the areas for acceptable cleaning. If any construction related debris is found the District will hire an outside cleaning crew and back charge the Contractor for cleaning fees." Paragraph 1.2.B.2.a.7. has been modified to state: "Existing antenna, San Bruno Police Department radio antenna, MUST remain operational during construction. The Contractor is to communicate through their CPM schedule expected dates for such disconnecting and reconnecting. The Contractor must submit a written request through the Construction Manager (Thomas Fakner) to coordinate such services. Telecommunications Engineering Associates requires 48hr advance notification." Paragraph 1.2.B.2.a.9. has been added: "Unit prices and Work Allowances are required for plywood substrate (1,000 SF included in base bid), built-up roofing walkway pads (25 LF included in base bid), facia (75 LF included in base bid), and plywood deck roof drains (2 locations included in base bid) and shall be entered on the bid form (Section 00 41 00). Refer to Section 01 22 00, Unit Prices, and 01 21 00, Allowance, for further details. The unit prices provided will be used to add to or deduct from the Contract Sum for the actual quantities replaced for the materials listed above." Paragraph 1.2.B.7. has been added: "Unit pricing and a Work Allowance are required for single-ply roofing walkway pads (250 LF included in base bid) and shall be entered on the bid form (Section 00 41 00). Refer to Section 01 22 00, Unit Prices, and 01 21 00, Allowance, for further details. The unit prices provided will be used to add to or deduct from the Contract Sum for the actual quantities replaced for the materials listed above."
	Section 01 21 00	Allowance V.2 dated April 20, 2015 supersedes V.1 dated April 6, 2015. Changes include: Title Changed from "Owner's Allowance" to "Allowance."

		Paragraph 1.2.C & D added: "C. Section 01 22 00 – Unit Prices D. Document 00 41 00 – Bid Form" Paragraph 1.3 title changed to: "Owner's Allowance for Non-Specified Work" Paragraph 1.4 added: "1.4 SPECIFIED WORK ALLOWANCE A. Include in the Contract, a stipulated sum/price for bid items #4 (CSM Bldg. 1, 14 &16 roofs- Single-Ply Roofing Walkway Pads), 6 (SKY Bldg. 16 – Plywood Substrate), 7 (SKY Bldg. 14 – Built-up Roofing Walkway Pads), 8 (Plywood Deck Roof Drains), and 9 (SKY Bldg. 14 – Fascia). B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Change Orders authorizing expenditure of funds from this Allowance. C. Funds will be drawn from Allowance only by approval of the Owner and authorization of Change Orders by the Construction Manager and Engineer of Record per Section 01 29 00 (Measurement and Payment), Section 01 22 00 (Unit Prices) and Section 00 41 00 (Bid Form). D. At closeout of Contract, funds remaining in Allowance will be credited to Owner by Changer Order."
G.	Section 01 22 00	Unit Prices V.1 is added to the project manual.
H.	Section 01 74 00	Cleaning V.2, dated April 20, 2015 supersedes V.1 dated April, 6, 2015. Paragraph 1.2.I. is added: "Contractor is obligated to perform daily clean-up of entire grounds to remove all construction related debris, scraps, nails, materials, etc. Prior to facility re-opening Contractor is obligated to perform a final walk through with a magnet sled to ensure all metal debris, as well as previously identified items, are removed from the play yards, perimeters and entrance areas. District personnel will inspect the areas for acceptable cleaning. If any construction related debris is found the District will hire an outside cleaning crew and back charge the Contractor for cleaning fees."
I.	Section 02 41 22	Selective Demolition dated April 20, 2015 supersedes the version dated April 2, 2015 and Section 02 41 22B Selective Demolition (Skyline) in their entirety.
J.	Section 06 10 00	Rough Carpentry dated April 20, 2015 supersedes the version dated April 2, 2015 and Section 06 10 00B Rough Carpentry (Skyline) in their entirety.
	Section 07 22 00	Roof and Deck Insulation dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety.

		Change includes: Paragraph 2.1.A.8: "Tapered: 1/2-inch per foot slope unless otherwise indicated. a. Location: Raised roof of building 1 and valleys at buildings 1, 14, and 16." Paragraph 2.1.A.10.: "Adhered for concrete deck attachment and mechanically attached for metal deck attachment, in accordance with manufacturer's recommendations." Paragraph 2.2.B.: "Fasteners for Metal Deck: Fasteners to secure substrate boards shall be approved substrate board fasteners as recommended and approved by the substrate board manufacturer. Fasteners shall be corrosion resistance coated with 3-inch, 26 gauge galvalume coated plates. Length of fasteners shall be sized to provide no less than 1-1/2 inch embedment or 3/4 inch penetration beyond deck." Paragraph 3.4.E.: "Tapered Insulation: Install tapered insulation at raised roof of CSM Building 1 and at all valleys of CSM Buildings 1, 14, and 16. 1. Carefully layout each taper system to ensure positive roof drainage and no possibility of roof ponding. 2. Taper system shall smoothly transition between changes in slope. Provide tapered edge strips to avoid voids at toe of taper system." Paragraph 3.4.G.: "Mechanical Attachment of Rigid Insulation and Substrate Board at Horizontal Metal Deck Applications: Fasten through substrate board with non-corrosive screws and plates, minimum spacing to be one fastener per every four square feet. If fastening pattern set by manufacturer or necessary to meet ASCE 07-10 wind uplift requirements exceeds those of this section, the more stringent fastening requirements are to be followed. Fastening pattern to be increased in corners and perimeters per the requirements of ASCE 07-10. 1. Take necessary precautions to ensure that fasteners do not penetrate conduit or miscellaneous piping below the existing decking."
	Section 07 31 13	Asphalt Shingles dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety. Change includes: Paragraph 1.4.: "B. Preinstallation Conference: One week prior to starting the application of the roofing system and insulation, coordinate pre-roofing conference with the District, Construction Manager, Architect, Roofing Consultant, manufacturer's representative, General Contractor, Roofing Contractor, and other installers whose work interfaces with or affects roofing, including

		installers or roof accessories and roof-mounted equipment. Meeting goals are: 1. A clear understanding of Contract Documents. 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions. 3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays. 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening. 5. Review structural loading limitations of roof deck during and after roofing. 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing. 7. Review governing regulations and requirements for insurance and certificates if applicable. 8. Review temporary protection requirements for roofing during and after installation. 9. Review roof observation and repair procedures after roofing installation. C. The Contractor shall attend the conference with personnel directly responsible for the installation of roofing and insulation, flashing and sheet metal work, plumbing, and the roofing materials manufacturer. Conflicts shall be resolved and confirmed in writing. D. Provide all shop drawings, manufacturers' literature and submittals for approval a minimum of seven (7) days prior to pre-installation conference."
	Section 07 51 13	Built-Up Asphalt Shingles dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety. Change includes: Paragraph 2.2.C.: "Roofing System Design Fastening Pattern: 1. Corner: For full sheet, fasteners at laps and three rows of fasteners with rows equally spaced. a. Fastener spacing at laps: 5-1/2 inches on center. b. Fastener spacing between laps: 5-1/2 inches on center. 2. Perimeter: For full sheet, fasteners at laps and two rows of fasteners with rows equally spaced between laps. a. Fastener spacing at laps: 5 inches on center. b. Fastener spacing between laps: 7 inches on center. 3. Field-of-Roof: For full sheet, fasteners at laps and two rows of fasteners between laps. a. Fastener spacing at laps: 9 inches on center. b. Fastener spacing between laps: 12 inches on center."
	Section 07 54 00	Thermoplastic Membrane Roofing dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety.

		Change includes: Paragraph 1.1.A.2. is deleted. Paragraph 2.2.B.: "Wind Uplift Performance: Provide assembly meeting ASCE 7 requirements for wind uplift. Refer to Section 07 22 00, "Roof and Deck Insulation." Paragraph 2.5 is deleted in its entirety. Paragraph 2.6.M.2.is changed to: "Fibertite: Mellow Yellow" Paragraph 3.5 is deleted in its entirety.
K.	Section 07 62 00	Selective Demolition dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety. Change includes- Paragraph 3.4.E.: "Tapered Insulation: Install tapered insulation at raised roof of CSM Building 1 and at all valleys of CSM Buildings 1, 14, and 16. 1. Carefully layout each taper system to ensure positive roof drainage and no possibility of roof ponding. 2. Taper system shall smoothly transition between changes in slope. Provide tapered edge strips to avoid voids at toe of taper system." Paragraph 3.4.G: "Mechanical Attachment of Rigid Insulation and Substrate Board at Horizontal Metal Deck Applications: Fasten through substrate board with non-corrosive screws and plates, minimum spacing to be one fastener per every four square feet. If fastening pattern set by manufacturer or necessary to meet ASCE 07-10 wind uplift requirements exceeds those of this section, the more stringent fastening requirements are to be followed. Fastening pattern to be increased in corners and perimeters per the requirements of ASCE 07-10. 1. Take necessary precautions to ensure that fasteners do not penetrate conduit or miscellaneous piping below the existing decking."
	Section 07 72 00	Roof Accessories dated April 20, 2015 supersedes the version dated April 2, 2015 in its entirety.
	Section 09 24 00	Portland Cement Plastering April 20, 2015 supersedes the version dated April 2, 2015 in its entirety.
	Section 22 14 13	Facility Storm Drainage Piping April 20, 2015 supersedes the version dated April 2, 2015 in its entirety.

II. PLANS

Item No.	Reference	Description
A.	Plans	All project drawings dated April 2, 2015 are replaced in their entirety with the set identified as Addendum #1, dated April 16, 2015 by Allana Buick & Bers.

III. CLARIFICATIONS

Item No.	Reference	Description
A.	RFI #1	During a roof walk two questions were asked regarding asbestos and the CSM Building 1 roof, see attached document for full details. Subsequent hazardous materials sampling determined the caulking on the metal edging along the clear story roof contains asbestos but, the grey brushed on sealant found on some the mechanical units does not.
B.	Section 00 73 17	Regarding Insurance V.1 dated April 20, 2015 bidders should note: 1. The Contractor Enrollment Form is not required with the bid but, will be required post award from the awarded bidder. 2. Per paragraph 1.5.E., additional coverage is required for asbestos abatement.
C.	Section 01 10 00	The CM (Thomas Fakner) has confirmed that the Child Development Facility will be shut down from 6/2/15 through 6/12/15. No children and no staff will occupy the Facility during this time period.

END OF ADDENDUM

DOCUMENT 00 01 10

TABLE OF CONTENTS

CONDITIONS OF THE CONTRACT

SPECIFICATIONS

Division 1 - General Requirements

Division 2 and Above – Technical Requirements

SKYLINE COLLEGE BUILDING 14 (ONLY) SPECIFICATIONS

END OF DOCUMENT

DOCUMENT 00 01 15

LIST OF DRAWINGS

All project drawings included in the set identified as Addendum #1, dated April 16, 2015 by Allana Buick & Bers. Pages with changes are "Delta" as #1.

END OF DOCUMENT

DOCUMENT 00 11 19

INSTRUCTIONS TO BIDDERS

Bids are requested for a general construction contract, or work described in general, as follows:

THE COLLEGE OF SAN MATEO AND SKYLINE COLLEGE ROOF REPLACEMENT PROJECT

1. **RECEIPT OF BIDS.** Sealed Bids will be received by the District at their office (see paragraph 2 below) **no later than** 2:00 pm, on ~~April 24, 2015~~ MONDAY, APRIL 27, 2015. **District will receive Bids from pre-qualified contractors in a sealed envelope that is clearly labeled with the name and number of the bid. All Bids will be time stamped to reflect their submittal time. District will reject all Bids received after the specified time and will return such Bids to Bidders unopened. Bidders must submit Bids in accordance with this DOCUMENT 00 11 19.**

2. **CONTACT INFORMATION:**

   Bid Submittal and Mailing address:
   San Mateo County Community College District
   c/o Facilities Planning Department
   3401 CSM Drive
   San Mateo, CA 94402

   Contact Name:
   Paula Reyes

   Telephone:
   (650) 358-6733

   Fax:
   (650) 574-6203

   Email (acceptable for informal communication, but not legal notice): reyesp@smccd.edu

3. **BID SUBMISSION.** Bidder should mark its Bid envelope as BID FOR THE DISTRICT, BID NUMBER 86708, COLLEGE OF SAN MATEO AND SKYLINE COLLEGE ROOF REPLACEMENT PROJECT. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of District made as part of Bid prior to submission of Bid. Bidder's failure to submit all required documents strictly as required entitles District to reject the Bid as non-responsive.

4. Not used.

5. Not used.

6. **REQUIRED BID FORMS.** All Bidders must submit Bids using, where applicable, documents supplied in this Project Manual, including without limitation Document 00 41 00 (Bid Form), Document 00 43 10 (Indemnity and Release Agreement), 00 43 13 (Bond Accompanying Bid), Document 00 43 36 (Subcontractors List), Document 00 43 33 (Schedule of Major Equipment and Material Suppliers), Document 00 45 00 (Bidder Certifications), Document 00 45 14 (Key Personnel) and Document 00 45 19 (Non-collusion Affidavit). District will reject as non-responsive any Bid not submitted on the required forms. Bids must be full and complete. Bidders must complete all Bid items and supply all information required by Bidding Sections. District reserves the right in its sole discretion to reject any Bid as non-responsive as a result of any error or omission in the Bid. Bidders may not modify the Bid Form or qualify their Bids. Bidders must submit clearly and distinctly written Bids. Bidders must clearly make any changes in their Bids by crossing out original entries, entering new entries, and initialing new entries. District reserves the right to reject any Bid not clearly

written.

7. **REQUIRED BID SECURITY.** Bidders must submit with their Bids either cash, a cashier's check, or certified check from a responsible bank in the United States, or corporate surety bond furnished by a surety authorized to do business in the State of California, of not less than ten percent of amount of total Bid, including Owner's Allowance, payable to District. All Bidders choosing to submit a surety bond must submit it on the required form, Document 00 43 13 (Bond Accompanying Bid). District will reject as non-responsive any Bid submitted without the necessary Bid security.

   The District may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of ninety (90) Days after award or full execution of the Contract, whichever first occurs. Upon full execution of the Contract, and upon request by Bidder, District will return to the respective unsuccessful Bidders their Bid securities and Bid bonds.

8. **REQUIRED SUBCONTRACTORS LIST.** All Bidders must submit with their Bids the required information on all Subcontractors in Document 00 43 36 (Subcontractors List) for those Subcontractors who will perform any portion of the Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings confined in the plans and specifications, in excess of one half of one percent of total Bid. Violation of this requirement may result in Bid being deemed non-responsive and not being considered.
   A. **SUBCONTRACTORS LIST**. Public Contract Code Section 4104 is hereby incorporated in full by this reference. In compliance with PCC 4104 as of July 1, 2014, bidders **must list all SUBCONTRACTORS, AND THEIR ADDRESS**, that will fabricate and install a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid.

9. **PREVAILING WAGE and CONTRACTOR REGISTRATION.** The successful bidder shall be required to pay its workers on this project a sum not less than the general prevailing wage rate of per diem wages and not less than the general prevailing rate for holiday and overtime work for work of a similar character in the locality in which the project is performed as provided under California Labor Code section 1770 et sec. The District has determined the prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work in the locality in which this project is to be performed for each craft, classification or type of work needed to execute the work.

   Contractor shall be required to post job site notices, at each job site, including a copy of such prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations, prescribed by regulation.

   Each Bidder submitting a bid to complete the work, labor, materials and/or services ("Work") subject to this project must be a Department of Industrial Relations registered contractor pursuant to Labor Code §1725.5 ("DIR Registered Contractor"). A Bidder who is not a DIR Registered Contractor when submitting a bid for the Work is deemed "not qualified" and the bid of such a Bidder will be rejected for non-responsiveness. Pursuant to Labor Code §1725.5, all Subcontractors identified in a Bidder's Subcontractors' List shall be DIR Registered Contractors. If awarded the Contract for the Work, at all times during performance of the Work, the Bidder and all Subcontractors, of any tier, shall be DIR Registered Contractors. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code Section 1771.5.

10. **MANDATORY PRE-BID CONFERENCE and SITE VISIT.** District will conduct two (2) Mandatory Pre-Bid Conferences and Site Visits, per Document 00 11 13 (Advertisement for Bids). District reserves the right to schedule and organize the Site Visit to minimize congestion and disruption to existing facilities and congestion. Bidders are encouraged to submit written questions in connection with the Site Visit. District will transmit to all parties recorded as having received Bidding documents such Addenda as District in its discretion considers necessary in response to written questions. Bidders shall not rely on oral statements. Oral statements will not be binding or legally effective. Other Pre-Bid Site visits may be scheduled at District's sole discretion, depending on staff availability.

11. **OTHER REQUIREMENTS PRIOR TO BIDDING.** Submission of Bid signifies Bidder's careful

examination of Bidding Documents and complete understanding of the nature, extent, and location of Work to be performed. As a condition to Bidding, Bidder must complete tasks listed in Document 00 52 00 (Agreement), Article 5. Submission of Bid shall constitute Bidder's express representation to the District that Bidder has fully completed these tasks.

12. **EXISTING DRAWINGS AND GEOTECHNICAL DATA.** Once a request to review documents has been received, digital copies will be made available. Nevertheless, by submitting a Proposal, Contractor accepts full responsibility for reviewing, knowing and understanding the contents of all of these materials.

13. **ADDENDA.** Bidders must direct all questions about the meaning or intent of Bidding Documents to District Representative in writing. Interpretations or clarifications considered necessary by District in response to such questions will be issued by Addenda mailed, faxed, or delivered to all parties recorded by District as having received Bidding Documents. Addenda will be written and will be issued to each bidder to the address or fax number supplied District by Bidder. District may not answer questions received after 4:00pm on Friday, April 17, 2015. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
    A. Addenda may also be issued to modify the Bidding Documents as deemed advisable by District.
    B. Addenda shall be acknowledged by number with signature in Document 00 41 00 (Bid Form) and shall be part of the Contract Documents. A complete listing of Addenda may be secured from District.

14. **SUBSTITUTIONS.** Bidders must base Bids on products and systems specified in Contract Documents or listed by name in Addenda.
    A. Except as provided in paragraph 15.c below, District will consider substitution requests on for "or equal items." Bidders wanting to use "or equal" item(s) may submit Document 00 43 25 (Substitution Request Forms) items no later than thirty (30) days after the date of the Notice to Proceed. After that date, the District will not accept "or equal" substitution requests. To assess "or equal" acceptability of product or system, submittals of substitutions shall contain the information required in Document 00 43 25 (Substitution Request Forms) and set forth in Section 01 60 00 (Product Requirements). Insufficient information will be grounds for rejection of substitution. District shall, within a reasonable period of time after having received a request for substitution, issue in writing its decision as to whether the proposed substitute item is an "or equal" item. District's decision shall be conclusive on all Bidders.
    B. Approved substitutions shall be listed in Addenda and become part of contact Documents.
    C. Substitutions may be requested after submitting Bids and Award of contract only in accordance with requirements specified in Section 01 60 00 (Product Requirements).
    D. As further limitation on Bidder's privilege to substitute items, District has found that certain items are designated as District standards and certain items are designated to match existing items in use on a particular public improvement, either completed or in the course of completion, and/or are only available from one source. As to such items, District will not permit substitution. District will not permit substitutions for the following items:

15. **WAGE RATES.** 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 available through the Department of Industrial Relations and are deemed included in the Bidding Documents. See http://www.dir.ca.gov/dirdatabases.html. Upon request, District will make available copies to any interested party. In addition, Contractor shall post the applicable prevailing wage rates at the Site.

16. **EQUAL EMPLOYMENT OPPORTUNITY.** Contractor shall comply with all applicable federal, state, and local laws, rules, and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical conditions, disability, or any other reason.

17. **BID OPENING.** District will open all bidders' envelopes, initially evaluate them for responsiveness, and determine an Apparent Low Bidder as specified herein.

18. **DETERMINATION OF APPARENT LOW BID.** Apparent Low Bid will be based solely on the total amount of all Bid items (including any alternates) based on assumptions contained in Document 00 41 00 (Bid Form). A1l Bidders are required to submit Bids on all Bid items (including any alternates).

19. Not used.

20. BID EVALUATION. District may reject any or all Bids and waive any informalities or minor irregularities in the Bids. District also reserves the right, in its discretion, to reject any or all Bids and to re-bid the Project. District reserves the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids, and to reject the Bid of any Bidder if District believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. For purposes of this paragraph, an "unbalanced Bid" is one having nominal prices for some work items and enhanced prices for other work items.

A. In evaluating Bids, District will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, omit prices and other data, as may be requested in Document 00 41 00 (Bid Forms) or prior to the Notice of Award.
B. District may conduct reasonable investigations and reference checks of Bidder, proposed Subcontractors, suppliers and other persons and organizations as District deems necessary to assist in the evaluation of any Bid; ability qualifications, financial ability proposed Subcontractors, suppliers, and to establish Bidder's responsibility, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing. District shall have the right to consider information provided by sources other than Bidder. District shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.
C. Discrepancies between the multiplication of units of Work and limit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures will be resolved in favor of the words.
D. Quantities stated in the Bidding Documents are approximate only and are subject to correction upon final measurement of the Work, and are subject further to the rights reserved by the District to increase or diminish the amount of work under any classification as advantages to design or construction needs require.
E. District may determine whether a Bidder is qualified in its sole discretionary judgment.

21. AWARD. If the contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder. Following completion of all required District procedures and receipt of all District approvals, District will issue Document 00 51 00 (Notice of Award) to successful Bidder.

22. BID PROTEST. Any Bid protest must be submitted in writing to the District's offices, before 2:00pm of the fifth (5) day following opening of Bidder's Envelopes.

A. The initial protest document must contain a complete statement of the basis for the protest.
B. The protest must refer to the specific portion of the document that forms the basis for the protest.
C. The protest must include the name, address, and telephone number of the person representing the protesting party.
D. Only Bidders who the District otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, District may conduct the same investigation and evaluation as District is entitled to take regarding an Apparent Low Bidder.
E. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
F. The procedure and time limits set forth in this paragraph are mandatory and are Bidder's sole and exclusive remedy in the event of Bid protest. Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.
G. Bid protests shall be submitted directly to the district at their offices located at:

San Mateo County Community College District
c/o José D. Nuñez, Vice Chancellor, Facilities Planning, Maintenance & Operations

3401 CSM Drive
San Mateo, CA 94402

* a copy of this protest shall be sent to Pepper Powell, Project Coordinator, Facilities Planning Department.

23. POST-NOTICE OF AWARD REQUIREMENTS. After Notice of Award, the successful Bidder must execute and submit the following documents as indicated below.

A. Submit the following documents to District by 4:00 p.m. of the tenth (10) day following Notice of Award. Execution of Contract by District depends upon approval of these documents:
   1) Document 00 52 00 (Agreement): To be executed by successful Bidder. Submit two originals, each bearing an original signature.
   2) Document 00 61 00 (Construction Performance Bond): To be executed by successful Bidder and surety, in the amount set forth in Document 00 61 00 (Construction Performance Bond). Submit one original.
   3) Document 00 62 00 (Construction Labor and Material Payment Bond): To be executed by successful Bidder and surety, in the amount set forth in Document 00 62 00 (Construction Labor and Material Payment Bond). Submit one original.
   4) Insurance certificates and endorsements required by Section 00 71 00 (General Conditions) Article 4. Submit one original set.
   5) The Guaranty in the form set forth in Document 00 65 36 (Guaranty). Submit one original, bearing an original signature.
   6) OCIP Insurance Enrollment Forms as set forth in Section 00 73 17 (Insurance). Submit one original.
   7) Project Stabilization Agreement Letter of Assent as set forth in Section 01 35 27 (Project Labor Agreement). Submit one original.

B. District shall have the right to communicate directly with Apparent Low Bidder's proposed performance bond surety, to confirm the performance bond. District may elect to extend the time to receive performance and labor and material payment bonds.

C. Successful Bidder's failure to submit the documents required herein, in a proper and timely manner, entitles District to rescind its award, and to cause Bidder's Bid security to be forfeited as provided herein.

24. FAILURE TO EXECUTE AND DELIVER DOCUMENTS. If Bidder to whom contact is awarded shall, within the period described in paragraph 23A of this Document 00 11 19, fail or neglect to execute and deliver all required Contract Documents and file all required bonds, insurance certificates, and other documents, District may, in its sole discretion, foreclose on Bidder's deposit surety bond, or deposit Bidder's cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for Bidder's failure to enter into the Contract Documents. Bidder agrees that calculating the damages District may suffer as a result of Bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of Bidder's required Bid security shall be the agreed and presumed amount of District's damages. In addition, upon such failure District may determine the next Apparent Low Bidder and proceed accordingly.

25. MODIFICATION OF COMMENCEMENT OF WORK. District expressly reserves the right to modify the date for the Commencement of Work under the Contact and to independently perform and complete work related to the Project.

26. WITHDRAWAL OF BIDS. Bidders may withdraw their Bids at any time prior to the Bid opening time fixed in this Document 00 11 19, only by written request for the withdrawal of Bid filed with the District's representative. Bidder or its duly authorized representative shall execute request to withdraw Bid. The submission of a Bid does not commit the District to award a contract for the Project, to pay costs incurred in the preparation of a Bid, or to procure or contract for any goods or services.

27. PUBLIC RECORDS ACT REQUESTS.

A. Per the Public Records Act, District will make available to the public all correspondence and written questions submitted during the Bid period, all Bid submissions opened in accordance with the procedures of this Document 00 11 19, and all subsequent Bid evaluation information. All submissions not opened will remain sealed and eventually be returned to the submitter. Except as otherwise required by law, District will not disclose trade secrets or proprietary financial information submitted that has been designated confidential by Bidder. Any such trade secrets or proprietary financial information that a Bidder believes

should be exempted from disclosure shall be specifically identified and identified as such. Blanket-type identification by designating whole pages or section shall not be permitted and shall be invalid. The specific information must be clearly identified as such.

B. Upon a request for records regarding this Bid, District shall notify Bidder involved within ten (10) Days from receipt of the request of a specific date when the records will be made available for inspection. lf the Bidder timely identifies any impropriety, trade secret, or confidential commercial or financial information that Bidder determines is not subject to public discloses and requests District to refuse to comply with the records request, Bidder shall take all appropriate legal action and defend District's refusal to produce the information in all forums; otherwise, District will make such information available to the extent required by applicable law, without restriction.

C. Information disclosed to the District and the attendant submissions are the property of District unless Bidder makes specific reference to data that is considered proprietary. Subject to the requirements in the Public Records Act, reasonable efforts will be made to prevent the disclosure of information except on a need-to-know basis during the evaluation process.

28. CONFORMED CONSTRUCTION DOCUMENTS. Following Award of Contract, District will prepare a conformed set of Contract Documents reflecting Addenda issued during bidding, which will, failing objection, constitute the approved set of Contract Documents.

29. DEFINITIONS. A1l abbreviations and definitions of terms used in this Document 00 11 19 are set forth in Section 01 42 00 (References and Definitions).

END OF DOCUMENT

DOCUMENT 00 41 00

BID FORM
TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID

To be submitted as part of bid by the time and date specified in Section 00 11 19 (Instructions to Bidders), paragraph 1.

TO THE HONORABLE BOARD OF TRUSTEES OF THE SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT

THIS BID IS SUBMITTED BY:

_____

(Firm/Company Name)

Re: BID NUMBER 86708, THE COLLEGE OF SAN MATEO AND SKYLINE COLLEGE ROOF REPLACEMENT PROJECT

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the San Mateo County Community College District ("District") in the form included in the Contract Documents, Section 00 52 00 (Agreement), to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Contract Documents, Section 00 11 13 (Advertisement for Bids), and Section 00 11 19 (Instructions to Bidders), including, without limitation, those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for sixty (60) Days after the day of Bid opening.

3. In submitting this Bid, Bidder represents:

   (a) Bidder has examined all of the Contract Documents and the following Addenda (receipt of all of which is hereby acknowledged).

Addendum No.	Addendum Date	Signature of Bidder

   (b) Bidder has visited the Site and performed tasks, reviews, examinations, and analysis and given notices, regarding the Project and the Site, as set forth in Section 00 52 00 (Agreement), Article 5.

   (c) N/A

   (d) Bidder has given District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and as-built drawings and actual conditions and the written resolution thereof through Addenda issued by District is acceptable to Contractor.

(e) Bidder and all Subcontractors identified in Bidder's Subcontractors' List are a Department of Industrial Relations registered contractor pursuant to Labor Code §1725.5. At all times during the performance of all Work, the Bidder and all Subcontractors, of any tier, shall be DIR Registered Contractors.

4. In submitting this Bid, Bidder represents that the value of its bid for the Work of the Contractor Documents reflects a credit for insurance coverage provided by the Owner Controlled Insurance Program.

	Signature of Bidder
Bidder's signature represents acknowledgement of OCIP credit in Bidder's bid	

5. Based on the foregoing, Bidder proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in the following Schedule of Bid Prices:

SCHEDULE OF BID PRICES

All Bid items must be filled in completely. Section 01 10 00 (Summary of Work) describes the scope of work to be performed under this contract. Quote in figures only, unless words are specifically requested.

ITEM	DESCRIPTION	UNIT PRICE	TOTAL
1.	**BASE BID:** All Work of Contract Documents other than Work separately provided for under other Bid items **College of San Mateo, Building 1 roof-** asbestos abatement, roof removal and replacement	[LUMP SUM]	$
2.	**BASE BID: College of San Mateo, Building 14 roof-** removal and replacement	[LUMP SUM]	$
3.	**BASE BID: College of San Mateo, Building 16 roof-** removal and replacement	[LUMP SUM]	$
4.	**College of San Mateo, Buildings 1, 14 and 16:** Single-Ply Roofing Walkway Pads, new installation, UNIT PRICE AND WORK ALLOWANCE (BASED ON THE ESTIMATED COMBINED TOTAL OF 250 LF INCLUDED IN THE BASE BID FOR ALL THREE ROOFS LISTED ABOVE) Refer to Section 01 22 00 Unit Prices Unit Price No. 2 for description.	UNIT PRICE: $_____ / LF x 250 LF =	WORK ALLOWANCE: [TOTAL. TOTAL IS YOUR UNIT PRICE x 250 LF ESTIMATED QUANTITY] $
5.	**BASE BID: Skyline College Building 14 roof-** removal and replacement	[LUMP SUM]	$
6.	**Skyline College Building 14:** Plywood Substrate Replacement **UNIT PRICE AND WORK ALLOWANCE** (BASED ON 1,000 SF, THE ESTIMATED TOTAL INCLUDED IN THE BASE BID FOR THE ONE ROOF LISTED ABOVE) Refer to Section 01 22 00 Unit Prices Unit Price No. 1 for description.	UNIT PRICE: $_____ / SF x 1,000 SF =	WORK ALLOWANCE: [TOTAL. TOTAL IS YOUR UNIT PRICE x 1,000 SF ESTIMATED QUANTITY] $
7.	**Skyline College Building 14:** Built-up Roofing Walkway Pads, new installation, **UNIT PRICE AND WORK ALLOWANCE** (BASED ON 25 LF, THE ESTIMATED TOTAL INCLUDED IN THE BASE BID FOR THE ONE ROOF LISTED ABOVE) Refer to Section 01 22 00 Unit Prices Unit Price No. 5 for description.	UNIT PRICE: $_____ / LF x 25 LF =	WORK ALLOWANCE: [TOTAL. TOTAL IS YOUR UNIT PRICE x 25 LF ESTIMATED QUANTITY] $
8.	**Skyline College Building 14:** Plywood Deck roof drain replacement **UNIT PRICE AND WORK ALLOWANCE** (BASED ON 2 LOCATIONS, THE ESTIMATED TOTAL FOR THE ONE ROOF LISTED ABOVE) Refer to Section 01 22 00 Unit Prices Unit Price No. 4 for description.	UNIT PRICE: $_____ / EA x 2 EA =	WORK ALLOWANCE: [TOTAL. TOTAL IS YOUR UNIT PRICE x 2 EACH ESTIMATED QUANTITY] $
9.	**Skyline College Building 14:** Fascia replacement **UNIT PRICE AND WORK ALLOWANCE** (BASED ON 75 LF, THE ESTIMATED TOTAL INCLUDED IN THE BASE BID FOR THE ONE ROOF LISTED ABOVE) Refer to Section 01 22 00 Unit Prices Unit Price No. 3 for description.	UNIT PRICE: $_____ / LF x 75 LF =	WORK ALLOWANCE: [TOTAL. TOTAL IS YOUR UNIT PRICE x 75 LF ESTIMATED QUANTITY] $

10.	Owner's Allowance for Non-Specified Work	= 10% OF SUM OF ITEMS #1 - 9	$
11.	Total Bid Amount (Sum of Items #1 - 10)		$

Total Bid Price (in words): _____

5. The low bid will be determined by the sum of Bid Items #1 through 10.

6. Subcontractors for work included in all Bid items are listed on the attached Document 00 43 36 (Subcontractors List).

6.1 Unit pricing – the unit price amounts entered in the "Unit Price" column of lines 4, 6, 7, 8, and 9 of the Bid Form, must be utilized to calculate the "Work Allowance" entered in the "Total" column. These unit price values will become the contractual basis for additive and deductive modifications to the Contract Sum per Section 01 22 00 Unit Prices. The individual Unit Price values will not be used to determine the low bid.

6.2 Work allowance - the sums entered in the "Total" column as the specific total for line items 4, 6, 7, 8, and 9 will be awarded with the contract. These funds will be drawn from the individual Work Allowance only by approval of the Owner and authorization of Change Orders by the Construction Manager and Engineer of Record per Section 01 29 00 (Measurement and Payment), Section 01 22 00 (Unit Prices) and Section 00 41 00 (Bid Form). The Work Allowance will be used to determine the low bid, per item 5 of this section.

7. The undersigned Bidder understands that District reserves the right to reject this Bid.

8. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Award, is mailed or delivered to the undersigned Bidder within the time described in paragraph 2 of this Section 00 41 00 or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Section 00 11 19 (Instructions to Bidders) within the times specified therein. These documents include, but are not limited to, Section 00 52 00 (Agreement), Section 00 61 00 (Construction Performance Bond), and Section 00 62 00 (Construction Labor and Material Payment Bond).

9. Notice of Award or request for additional information may be addressed to the undersigned Bidder at the address set forth below.

10. The undersigned Bidder herewith encloses cash, a cashier's check, or certified check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in form specified in Section 00 11 19 (Instructions to Bidders), in the amount of ten percent (10%) of the total of Bid items 1 through 6 and made payable to "San Mateo County Community College District".

11. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Section 00 71 00 (General Conditions) and to complete all work within the time specified in Section 00 52 00 (Agreement). The undersigned Bidder acknowledges that District has reserved the right to delay or modify the commencement date. The undersigned Bidder further acknowledges District has reserved the right to perform independent work at the Site, the extent of such work may not be determined until after the opening of the Bids, and that the undersigned Bidder will be required to cooperate with such other work in accordance with the requirements of the Contract Documents.

12. The undersigned Bidder agrees that, in accordance with Section 00 71 00 (General Conditions), liquidated damages for failure to complete all Work in the Contract within the time specified shall be as set forth in Section 00 52 00 (Agreement).

13. The names of all persons interested in the foregoing Bid as principals are:

(IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full).

NAME OF BIDDER: _____
licensed in accordance with the act for the registration of Contractors, and with
License Number: _____
Expiration: _____

_____ _____
Where incorporated, if applicable

_____

_____
Principals

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

_____
Signature of Bidder

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Address: _____
_____
_____

Officers authorized to sign contracts: _____
_____
_____

Telephone Number(s): _____

Fax Number(s): _____
_____

E-Mail address: _____

Federal ID Number: _____

Date of Bid: _____

END OF DOCUMENT

DOCUMENT 00 52 00

AGREEMENT

THIS AGREEMENT, dated this _____ day of _____, 20____ , by and between _____ **[Name of Contractor]** whose place of business is located at _____, _____ **[Address of Contractor]** ("Contractor"), and the SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT ("District") acting under and by virtue of the authority vested in the District by the laws of the State of California.

WHEREAS, District, by action of its Board of Trustees on the _____day of _____, 2015 awarded to Contractor the following contract:

BID NUMBER 86708
THE COLLEGE OF SAN MATEO AND SKYLINE COLLEGE ROOF REPLACEMENT PROJECT

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and District agree as follows:

Article 1. Work

1.1 Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions of the Contract Documents.

Article 2. District's Representative, Architect/Engineer and Construction Manager

2.1 District has designated Swinerton Management and Consultingto act as District's Representative(s), who will represent District in performing District's duties and responsibilities and exercising District's rights and authorities in Contract Documents. District may change the individual(s) acting as District's Representative(s), or delegate one or more specific functions to one or more specific District's Representatives, including without limitation engineering, architectural, inspection and general administrative functions, at any time with notice and without liability to Contractor. Each District's Representative is the beneficiary of all Contractor obligations to District, including without limitation, all releases and indemnities.

2.2 District has designated Thomas Fakner to act as Construction Manager. District may assign all or part of the District Representative's rights, responsibilities and duties to Construction Manager. District may change the identity of the Construction Manager at any time with notice and without liability to Contractor.

2.3 District has designated Allana Buick & Bers, Inc. to act as Architect/Engineer. District may change the identity of the Architect/Engineer at any time with notice and without liability to Contractor.

2.4 All notices or demands to District under the Contract Documents shall be submitted to the District's Representative at:

Thomas Fakner, Swinerton Management and Consulting– Construction Manager

College of San Mateo and Skyline College Roof Replacement Project

3300 College Drive, Building 16

San Bruno, CA 94066

or to such other person(s) and address(es) as District shall provide to Contractor.

Article 3. Contract Time and Liquidated Damages

3.1 Contract Time.

Contractor shall commence Work at the Site on the date established in the Notice to Proceed. District reserves the right to modify or alter the Commencement Date of the Work.

[PM- Consider interim milestones and add here if possible.]

Contractor shall achieve Substantial Completion of the entire Work within **74 consecutive** days (August 14, 2015) from the date when the Contract Time commences to run as provided in Section 00 71 00 (General Conditions). Contractor shall achieve Final Completion of the entire Work and be ready for Final Payment in accordance with Section 01 77 00 (Contract Closeout) within [**45]** days from the date of acceptance of Substantial Completion to run as provided in Section 00 71 00 (General Conditions).

3.2 Liquidated Damages.

District and Contractor recognize that time is of the essence of this Agreement and that District will suffer financial loss in the form of contract administration expenses (such as project management and consultant expenses), if all or any part of the Work is not completed including consequential loss of use and disruption of normal operations within the times specified above, plus any extensions thereof allowed in accordance with the Contract Documents. Consistent with Article 15 of Section 00 71 00 (General Conditions), Contractor and District agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of actual damages incurred by District because of a delay in completion of all or any part of the Work. Accordingly, District and Contractor agree that as liquidated damages for delay Contractor shall pay District:

3.2.1 $**1000** for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.

3.2.2 $**500** for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

[PM- Include LDs for interim milestones listed in 3.1 to the work as appropriate to the contract.]

These measures of liquidated damages shall apply cumulatively and except as provided below, shall be presumed to be the damages suffered by District resulting from delay in completion of the Work.

3.3 Liquidated damages for delay shall only cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by District as a result of delay or costs of substitute facilities. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from defective Work, lost revenues or damages suffered by others who then seek to recover their damages from District (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof.

Article 4. Contract Sum

4.1 District shall pay Contractor the Contract Sum for completion of Work in accordance with Contract Documents as follows:

[PM- WILL ENTER FINAL CONTRACT AWARD PRICE HERE]

Article 5. Contractor's Representations

In order to induce District to enter into this Agreement, Contractor makes the following representations and warranties:

5.1 Contractor has visited the Site and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions, and federal, State and local laws and regulations that in any manner may affect cost, progress, performance

or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.

5.2 Contractor has examined thoroughly and understood all reports of exploration and tests of subsurface conditions, as-built drawings, drawings, products specifications or reports, available for Bidding purposes, of physical conditions, including Underground Facilities, which are identified in Document 00 31 19 (Reports, Surveys and Existing Conditions), or which may appear in the Drawings. Contractor accepts the determination set forth in these Sections and Section 00 71 00 (General Conditions) of the extent of the information contained in such materials upon which Contractor may be entitled to rely.

5.3 Contractor has correlated its knowledge and its review of those items with the terms and conditions of the Contract Documents.

5.4 Contractor has given District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the written resolution thereof through Addenda issued by District is acceptable to Contractor.

5.5 Contractor is duly organized, existing and in good standing under applicable state law, and is duly qualified to conduct business in the State of California.

5.6 Contractor has duly authorized the execution, delivery and performance of this Agreement, the other Contract Documents and the Work to be performed herein. The Contract Documents do not violate or create a default under any instrument, agreement, order or decree binding on Contractor.

5.7 Contractor and all Subcontractors identified in Contractor's Subcontractors' List are a Department of Industrial Relations registered contractor pursuant to Labor Code §1725.5. At all times during the performance of all Work, the Contractor and all Subcontractors, of any tier, shall be DIR Registered Contractors.

5.8 Contractor has listed the following Subcontractors pursuant to the Subcontractor Listing Law, California Public Contracting Code §4100 et seq.

[PM- TYPE IN SUBCONTRACTOR LIST USING TABLE BELOW]

Name of Subcontractor and Location of Mill or Shop	Description of Work: Reference To Bid Items	Subcontractor's License No.

Article 6. Contract Documents

6.1 Contract Documents consist of the following Sections, including all changes, addenda, and modifications thereto:

Document 00 01 01	Title Page
Document 00 01 07	Seals Page
Document 00 01 10	Table of Contents
Document 00 01 15	List of Drawings
Document 00 31 19	Reports, Surveys and Existing Conditions
Document 00 41 00	Bid Form
Document 00 43 25	Substitution Request Form (if submitted and approved during bid period)
Document 00 43 33	Schedule of Major Equipment and Material Suppliers

Document 00 43 36	Subcontractors List
Document 00 43 45	Escrow Agreement for Security Deposit in Lieu of Retention (if submitted by contractor)
Document 00 45 00	Bidder Certifications
Document 00 45 14	Key Personnel
Document 00 50 00	Notice to Proceed
Document 00 51 00	Notice of Award
Document 00 52 00	Agreement
Document 00 61 00	Construction Performance Bond
Document 00 62 00	Construction Labor and Material Payment Bond
Document 00 65 36	Guaranty
Document 00 65 73	Agreement and Release of Any and All Claims
Section 00 71 00	General Conditions
Section 00 73 00	Supplementary Conditions
Section 00 73 05	Supplementary Conditions – Hazardous Materials (if included)
Section 00 73 17	Insurance
Section 00 73 37	Apprenticeship Program
Section 00 91 0X	Addendum No. X (if included)
Section 00 91 0X	Addendum No. X (if included)
Section 00 91 0X	Addendum No. X (if included)
Section 01 10 00	Summary of Work
Section 01 21 00	Allowance
Section 01 22 00	Unit Prices
Section 01 23 00	Alternates (if included)
Section 01 26 00	Modification Procedures
Section 01 29 00	Measurement and Payment
Section 01 31 19	Project Meetings
Section 01 32 16	Progress Schedules and Reports
Section 01 32 19	Submittal Procedures
Section 01 35 00	Special Procedures
Section 01 35 27	Project Labor Agreement
Section 01 41 00	Regulatory Requirements
Section 01 41 01	Regulatory Requirements – Hazardous Materials (if included)
Section 01 42 00	References and Definitions
Section 01 45 23	Testing and Inspection
Section 01 51 00	Temporary Facilities and Controls
Section 01 56 00	Site Security and Safety
Section 01 58 00	Project Identification and Signs
Section 01 60 00	Product Requirements
Section 01 74 00	Cleaning
Section 01 76 01	Existing Underground Facilities
Section 01 77 00	Contract Closeout
Section 01 78 39	Project Record Documents
Section 02 00 80	Hazardous Materials Abatement
Section 02 41 22	Selective Demolition
Section 06 10 00	Rough Carpentry
Section 07 22 00	Roof and Deck Insulation
Section 07 31 13	Asphalt Shingles
Section 07 51 13	Built-up Asphalt Roofing
Section 07 54 00	Thermoplastic Membrane Roofing
Section 07 62 00	Sheet Metal Flashing and Trim
Section 07 72 00	Roof Accessories
Section 09 24 00	Portland Cement Plastering
Section 22 14 13	Facility Storm Drainage Piping

6.2 There are no Contract Documents other than those listed in this Document 00 52 00, Article 6. Document 00 31 19 (Reports, Surveys and Existing Conditions), and the information supplied therein, are not Contract Documents. The Contract Documents may only be amended, modified or supplemented as provided in Section 00 71 00 (General Conditions).

Article 7. Miscellaneous

7.1 Terms used in this Agreement are defined in Section 00 71 00 (General Conditions) and Section 01 42 00 (References and Definitions) and will have the meaning indicated therein.

7.2 It is understood and agreed that in no instance are the persons signing this Agreement for or on behalf of District or acting as an employee, agent, or representative of District, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise, and it is further understood and agreed that liability of the District is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.

7.3 Contractor shall not assign any portion of the Contract Documents, and may subcontract portions of the Contract Documents only in compliance with the Subcontractor Listing Law, California Public Contracting Code §4100 *et seq*.

7.4 In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, Contractor or Subcontractor offers and agrees to assign to the awarding body 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 Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time District tenders final payment to Contractor, without further acknowledgment by the parties.

7.5 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 available through the Department of Industrial Relations and are deemed included in the Contract Documents by reference. See http://www.dir.ca.gov/dirdatabases.html Upon request, District will make available copies to any interested party.

7.6 Contractor shall be required to pay its workers on this project a sum not less than the general prevailing wage rate of per diem wages and not less than the general prevailing rate for holiday and overtime work for work of a similar character in the locality in which the project is performed as provided under California Labor Code section 1770 et sec. The District has determined the prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work in the locality in which this project is to be performed for each craft, classification or type of work needed to execute the work.

7.7 Contractor shall be required to post job site notices, at each job site, including a copy of such prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations, prescribed by regulation.

7.8 Pursuant to Section 1861 of the Labor Code, Contractor represents that it is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.

7.9 Contractor and each of Contractor's subcontractors agrees to complete and verify construction reports on a form prescribed by the Division of the State Architect and to file the reports no less than quarterly during construction as required by Title 24; at the completion of the Work; at the suspension of work for a period of more than one month; whenever the services of Contractor or any of Contractor's subcontractors are

terminated for any reason; and at any time a special verified report is required by the Division of the State Architect.

7.10 Should any part, term or provision of this Agreement or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Agreement and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).

7.11 This Agreement and the Contract Documents shall be deemed to have been entered into in the County of San Mateo, State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in San Mateo County. Contractor accepts the Claims Procedure in Section 00 71 00, Article 12, established under the California Government Code, Title 1, Division 3.6, Part 3, Chapter 5.

IN WITNESS WHEREOF the parties have executed this Agreement in duplicate the day and year first above written.

DISTRICT:

SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT

By: _____
Kathy Blackwood
Executive Vice Chancellor

CONTRACTOR:

_____
[Contractor's name]

By: _____
Signature

END OF DOCUMENT

SECTION 00 73 17
INSURANCE

PART 1 GENERAL

1.0 Section Includes

1. Introduction and Owner-Controlled Insurance Program (OCIP) Overview
2. District-Provided Insurance
3. Required Contractor-Provided Insurance Coverage
4. Additional Requirements
5. Sample Forms

1.1 Introduction and Owner-Controlled Insurance Program (OCIP) Overview

The District has elected to implement an Owner Controlled Insurance Program ("OCIP"). The District agrees to pay all premiums associated with the OCIP and will be the sole recipient of any dividend(s) and/or return premium(s) generated by the OCIP. Contractor's / Subcontractor's bid shall exclude any and all costs for insurance coverage provided under the OCIP.

The OCIP will provide Workers' Compensation, Employer's Liability, General Liability, Contractors' Pollution Liability, and Builders Risk insurance for eligible Contractors/Subcontractors providing direct, **on-site** labor to the District's Project, hereinafter called the "Project". Coverage provided by the OCIP is project site specific. The Project Site consists of any and all projects that are endorsed to this policy, which includes the:

1. Ways and means adjoining the endorsed project site.
2. Adjacent locations to the endorsed projects sites where incidental operations are being performed, excluding permanent locations.

Off-site locations, labor and operations are not covered by the OCIP. It will be the responsibility of each contractor / subcontractor to maintain off-site insurance, as identified in Paragraph 3.0, which specifies coverage types and minimum limits. **Contractors/subcontractors are also required to provide Automobile Liability coverage for both on-site and off-site activities.**

Keenan & Associates, herein after called "Program Administrator", shall administer the OCIP on behalf of the District. All Contractors/Subcontractors are required to cooperate with the District and its Program Administrator in all aspects of administering the OCIP. The Program Administrator's contact information is as follows:

Keenan & Associates
SEWUP Department
2355 Crenshaw Blvd., Ste. #200
Torrance, CA. 90501
Attention: Ms. Sandy Nottingham, OCIP Administrator
Phone: (310)212-3344 ext. 2006, Fax: (310)787-8838
E-mail: snottingham@keenan.com

1.2 APPLICABILITY OF THE OCIP

A. Eligibility

Eligible Contractors/Subcontractors includes those providing direct, on-site labor on the Project. Temporary labor services and leasing companies are to be treated as Eligible Contractors.

Ineligible Contractor includes, but is not limited to, consultants; suppliers who do not perform or do not subcontract installation; demolition that includes abatement and hazardous materials removal; vendors; materials dealers; guard services; non-construction janitorial services; and truckers, including trucking to the Project where delivery is the only scope of work performed. However, if contracted with an on-site installer, suppliers/vendors should be enrolled in the OCIP only for General Liability, as it pertains to the contractual relationship of the installer's on-site work.

Any questions regarding a Contractor's status as "Eligible" or "Ineligible" should be referred to the Program Administrator.

B. Participation

Participation in the OCIP is mandatory but not automatic. Pursuant to Government Code Section 4420.5, a Bidder and all identified Subcontractors must meet certain minimum standards for bids to be deemed responsive:

1. The number of allowable Serious and Willful violation findings (Labor Code Section 6300) against the Bidder's Contractor/Subcontractors by the Workers Compensation Appeals Board in the past five (5) years shall not exceed:
   - 1 to 3 Contractor/Subcontractors – a maximum of 1 Serious and Willful Violation
   - 4 to 6 Contractor/Subcontractors – a maximum of 2 Serious and Willful Violations
   - 7 or more Contractor/Subcontractors – a maximum of 3 Serious and Willful Violations

2. 100% of the listed firms must provide evidence of an Injury and Illness Prevention Program (IIPP)

3. Bidder's current published Workers' Compensation Experience Modification Factor (EMR) at bid opening shall not be greater than 1.25. 75% of the listed subcontractors must have an EMR of 1.25 or less averaged over the last three published years.

Failure of prospective bidders to participate in the mandatory insurance qualification process pursuant to Government Code Section 4420.5 shall disqualify them from participating in the Project as a Contractor/Subcontractor.

C. Post- Contract Award Enrollment

Document 00 51 00 – Notice of Award requires submission of a completed *Contract Enrollment Form* and a *Certificate of Insurance* as referenced in Section 1.5 and 1.6. An eligible contractor/subcontractor is not enrolled in the OCIP until the Program Administrator validates the *Contract Enrollment Form* and *certificates* by issuing a written notification to contractor/subcontractor.

Any Contractor/Subcontractor who enrolls in the OCIP after their start date will have to provide a No-Known-Loss Letter to the Program Administrator, along with the enrollment documentation. Enrollment is not guaranteed until acceptance of the enrollment documentation by the insurance carrier.

D. Reporting Requirements

1. Payroll Reporting

   - Workers' Compensation Insurance Rating Bureau Requirements

     Once an Eligible Contractor/Subcontractor is enrolled into the OCIP, the Program Administrator will issue a separate Workers' Compensation Policy. All Enrolled Contractors/Subcontractors will need to comply with the rules and regulations of the California Workers Compensation Insurance Rating Bureau (WCIRB).

   - Project Site Monthly Payroll Report

     Project Site Monthly Payroll Reports must be submitted to the Program Administrator on a monthly basis, until the completion of the contract. This report must summarize the unburdened payroll by Workers' Compensation Class Code. Certified payroll is not a requirement of the OCIP and cannot be accepted. If the *Project Site Monthly Payroll Report* is not submitted to Program Administrator on a monthly basis, the Construction Manager and/or District can withhold payment until the report is received. Contractor agrees to keep and maintain accurate and classified records of their payroll for operations at the Project Site. This payroll information

is submitted to the OCIP Insurance Carrier. At the end of each contract, a carrier audit may be performed using the reported payroll.

2. Contractor's Completion Notice

Contractor's Completion Notice must be submitted to the Program Administrator upon completion of work at the Project Site, which includes punch list items, but not warranty work. This form evidences all enrolled Contractors'/Subcontractors' actual start and completion dates, per each contract. This information is used to confirm that each Workers' Compensation Policy was issued with correct policy term dates, covering the Contractors/Subcontractors for the duration of their Work at the Project Site. This information is subsequently submitted to the WCIRB.

1.3 DISTRICT-PROVIDED INSURANCE (OCIP)

A. **Workers' Compensation and Employer's Liability Insurance**, will be provided by the Program Administrator, in accordance with applicable state laws, to all enrolled Contractors/Subcontractors reflecting the following Limits of Liability:

- Workers' Compensation – California Statutory Benefits
- Employer's Liability
  - $1,000,000 Bodily Injury each Accident
  - $1,000,000 Bodily Injury by Disease – Policy Limit
  - $1,000,000 Bodily Injury by Disease – Each Employee
- Deductible: None

B. **General Liability Insurance**, placed by the Program Administrator, will be provided on an "Occurrence" form under a master liability policy. Certificates of Insurance will be provided to all enrolled Contractors/Subcontractors reflecting the following Limits of Liability:

- $5,000,000 Bodily Injury and Property Damage Liability
- $10,000,000 General Aggregate
- $5,000,000 Products and Completed Operations
- 10 Years Completed Operations
- Limits are per Project
- Deductible: None

C. **Contractor's Pollution Liability**, placed by the Program Administrator, will be provided on a "Claims Made" form under a master liability policy. Certificates of Insurance will be provided to all enrolled Contractors/Subcontractors reflecting the following Limits of Liability:

- $25,000,000 Each Loss/Annual Aggregate
  - Claims expense, including defense cost, within limits
- $10,000 Deductible, Per Claim
  - The party legally responsible for any loss or damage shall, to the extent of such responsibility, pay the deductible

D. **Builders Risk,** property insurance purchased and maintained by the District, during the course of construction, at the Project Site. The coverage is maintained until Final Completion has been achieved. Such property insurance shall be written on a repair or replacement cost basis, subject to standard exclusions, property limitations and conditions. Such insurance shall include the interests of the District and Contractors/Subcontractors during the Course of Construction and shall provide broad coverage.

A deductible of $10,000-$25,000 ($50,000 on structural renovation work), which shall be determined by the type of construction, will apply to each occurrence. The deductible amount will be paid by the party or parties responsible for the loss or damage and will not be reimbursed by the OCIP Insurance Program.

1.4 OCIP CERTIFICATES AND POLICIES

The OCIP Program Administrator will provide each enrolled Contractor/Subcontractor their own Workers' Compensation policy. Certificates of Insurance will be furnished for the General Liability, any Excess Liability, Contractor's Pollution Liability, and Builders Risk coverage. These policies are available for review by the Contractor/Subcontractor, upon request to the District or the Program Administrator. Such policies or programs may be amended from time to time and the terms of such policies or programs are incorporated herein by reference. Contractors/Subcontractors hereby agree to be bound by the terms of coverage, as contained in such insurance policies and/or self-insurance programs.

1.5 REQUIRED CONTRACTOR-PROVIDED INSURANCE COVERAGE UNDER AN OCIP

For any work under this contract, and until completion and final acceptance of the work by the District, the Contractors/Subcontractors shall, at their own expense provide the following coverage for off-site locations, labor, and operations before commencing work on the Project Site. Automobile Liability Insurance must be maintained for both **on-site** and **off-site** operations. See Paragraph 1.6 for Certificate Holder specification. Furthermore, the policies shall provide not less than sixty (60) days prior written notice to the Program Administrator, of any material change in the insurance, cancellation, or non-renewal.

A. General Liability Insurance, minimum limits of liability are as follows:

	Prime Contractor	Subcontractor
▸ Bodily Injury and Property Damage	$2,000,000	$1,000,000
▸ Per Occurrence	$2,000,000	$1,000,000
▸ General Aggregate	$2,000,000	$1,000,000
▸ Products/Completed Operations Aggregate	$2,000,000	$1,000,000
▸ Personal/Advertising Injury Aggregate	$2,000,000	$1,000,000

The policy shall be endorsed to exclude the Project.

Note: If an enrolled participant in the OCIP chooses to have the policy endorsed to include the Project site during the construction period, coverage should be excess and/or difference in conditions (DIC) of the OCIP. This cost is not permitted to be passed back to Owner. Inclusion of the Project site on such insurance policies shall not replace the OCIP coverage or otherwise affect the cost identification requirement in Section 1.1.2.

B. Automobile Liability Insurance, must cover all vehicles owned by, hired by, or used on behalf of the Contractors/Subcontractors with the following limits of liability:

	Prime Contractor	Subcontractor
Bodily Injury and Property Damage	$2,000,000	$1,000,000

C. Workers' Compensation and Employer's Liability Insurance (off-site)

- Workers' Compensation –Statutory Benefits - All States
- Employer's Liability
  - $1,000,000 Bodily Injury each Accident
  - $1,000,000 Bodily Injury by Disease – Policy Limit
  - $1,000,000 Bodily Injury by Disease – Each Employee

The policy shall be endorsed to exclude the Project.

D. **Professional Liability Insurance**, if Contractor's work requires design and/or design-assist services, Contractor shall purchase and maintain, at its sole cost and expense Professional Liability (Errors and Omissions) insurance for all professional services provided. This Professional Liability insurance shall include full prior acts coverage sufficient to cover the services under this Agreement, the limits of which shall not be less than the following:

- $2,000,000, Per Claim/Aggregate
- Deductible or self-insured retention amount must not be greater than $100,000, including coverage of contractual liability.

Professional Liability Insurance is to be maintained during the term of the contract and for so long as the insurance is reasonably available as provided herein, for a period of ten (10) years after completion of the services.

E. **Environmental and Asbestos Abatement Coverages**, if the Contractor's/Subcontractor's scope of work involves the removal of asbestos, the removal/replacement of underground tanks, or the removal of toxic chemicals and substances, the Contractor/Subcontractor shall be required to provide coverage, with limits not less than $1,000,000 per claim basis, for such exposures subject to requirements and approval of the District.

F. **Aircraft or Watercraft Liability Insurance,** if any Contractor/Subcontractor, requires the use of Aircraft, including helicopters, or Watercraft at the Project Site, the Contractor/Subcontractor shall purchase and maintain, or cause the operator of the Aircraft or Watercraft to purchase and maintain, Aircraft or Watercraft liability insurance. This must insure passengers and the General Public against personal injury, bodily injury or property damage arising out of the maintenance, use or entrustment to others. It includes Aircraft or Watercraft owned or operated by or rented or loaned to any insured. Use includes operation and "loading or unloading". Contractor/Subcontractor shall be required to provide coverage, with limits not less than $1,000,000 per claim basis, for such exposures subject to requirements and approval of the District.

G. **Personal Property:** All Contractors'/Subcontractors' shall be solely responsible for any loss or damage to their personal property including, without limitation, their tools and equipment, mobile construction equipment, scaffolding, and temporary structures, whether owned, borrowed, used, leased or rented by any Contractor/Subcontractor. Contractors/Subcontractors may at their sole discretion, purchase and maintain insurance or self-insure such equipment and property, and any deductible in relation thereto shall be their sole responsibility. Any insurance, including self-insurance, shall be the Contractors'/Subcontractors' sole source of recovery in the event of a loss.

H. The OCIP is intended to provide broad coverages and high limits to all Enrolled Contractors/Subcontractors. The Owner does not warrant or represent that the OCIP coverages constitute an insurance program that adequately addresses the risks of the Contractors/Subcontractors.

Prior to the commencement of work under the contract, it is the responsibility of all Contractors/Subcontractors to ensure that the OCIP coverages provided sufficiently address their insurance needs. Any type of insurance or any increase of limits of liability not described in this Section, which the Contractors/Subcontractors require for their own protection or on account of any statute, will be their own responsibility and expense.

1.6 REQUIRED CONTRACTOR-PROVIDED CERTIFICATES OF INSURANCE

A. Required Endorsements:

1. Certificate shall name San Mateo County Community College District, its Board of Trustees, and their employees, representatives, consultants, agents and Architect/Engineer as additional insured, but only with respect to liability arising out of the activities of the Named Insured for Auto Liability.
2. Each such policy shall apply separately to each insured against which claim is made or suit is brought, except with respect to the limit of the insurance company's liability.

3. Insurance shall be primary and no other insurance or self-insured retention carried or held by District shall be called upon to contribute to a loss covered by insurance for the named insured, except when covered by the OCIP.
4. Insurance shall contain a provision requiring the insurance carriers to waive their rights of subrogation against District and all additional insured, as well as other insurance carriers for the Work
5. Insurance certificates shall be addressed to:

San Mateo County Community College District
c/o Statewide Educational Wrap Up Program (SEWUP)
2355 Crenshaw Blvd., Suite 200
Torrance, CA 90501

B. Certificates of insurance and endorsements shall have clearly typed thereon District Bid Number and title of Contract Documents. Written notice of cancellation, non-renewal, or reduction in coverage of any policy shall be mailed to District (Attention: Contract Administration/Inspection) at the address listed in Section 00 52 00 (Agreement), sixty (60) Days in advance of the effective date of the cancellation, non-renewal, or reduction in coverage. Contractor shall maintain insurance in full force and effect during entire period of performance of Contract Documents. Contractor shall keep insurance in force during warranty and guarantee periods. At time of making application for extension of time, and during all periods exceeding the Contract Time resulting from any cause, Contractor shall submit evidence that insurance policies will be in effect during requested additional period of time. Upon District's request, Contractor shall submit to District, within thirty (30) Days, copies of the actual insurance policies or renewals or replacements.

1.7 ADDITIONAL REQUIREMENTS

A. Waiver of Subrogation and District Indemnification

With respect to their work on the Project Site:

- District waives all rights of subrogation and recovery against the Contractors/ Subcontractors to the extent of any loss or damage, which is insured under the OCIP.
- Contractors/Subcontractors waive all rights of subrogation and recovery against the District and other Contractors/Subcontractors to the extent of any loss or damage, which is insured under the OCIP.
- The Contractors/Subcontractors are obligated to indemnify the District for damages or claims not covered by the OCIP.

B. No Release

The provision of the OCIP, by the District, will in no way be interpreted as relieving the Contractors/Subcontractors of any other responsibility or liability under this agreement or any applicable law, statute, regulation, or order.

C. Coverage to be Provided by Contractor/Subcontractor During Warranty Period

OCIP coverage terminates on the Project's Final Acceptance Date. Contractors/subcontractors who return to the Project Site after this date, for any reason, do so under their own insurance coverage.

D. Change Order Pricing

Change Order pricing shall exclude any costs relating to insurance coverage afforded under the OCIP.

E. Duties in the Event of a Loss

Contractors/Subcontractors are required to report any and all losses, which include potential losses, promptly to the Insurance Company, Program Administrator and District. A full description and details of the incurred loss are also required.

The Contractor/Subcontractor shall assist the District, its agents, and the Program Administrator, by providing the utmost cooperation in the adjustment of claims arising out of the operations conducted under, or in connection with, the Project and shall cooperate with the District's Insurers in claims and demands that arise out of the Work and that the Insurers are called upon to adjust.

F. Safety Program Requirements

Contractor/Subcontractors are required to adhere to the requirements outlined in Section 01 56 00 – Site Security and Safety.

Statewide Educational Wrap-Up Program
CONTRACTOR ENROLLMENT FORM

TO BE EXECUTED BY AWARDED CONTRACTOR AND SUBMITTED WITH EXECUTED CONTRACT
(Do not submit with Bid)

STATEWIDE EDUCATIONAL WRAP UP PROGRAM

CONTRACTOR ENROLLMENT FORM

District Name:	San Mateo County Community College District
Project Name:	

Contractor Information

Contractor/Subcontractor (Legal Name):			
If you are a subsidiary and / or division of another company, please indicate the name on file with the bureau:			
Address:			
City:		State:	Zip:
Name & Title Of Person(S) To Contact:		E-Mail Address:	
Phone Number:	( )	Fax:	
Contractor License #:		Federal Id #:	

Entity: ☐ Sole Proprietorship: ☐ Partnership: ☐ Corp: ☐ Other: ☐

Payroll/Accounting Contact (If Other Than Above):					
Phone:	( )	Fax:	( )	E-Mail Address:	

Contract Details

Your status on this Project:	☐	(a) General/Prime Contractor	☐	(b) Subcontractor	
	☐	(c) Tier/Subcontractor	☐	(d) Other	
If you checked (b), (c) or (d) above, give name of the contractor for whom you are under contract with:					
Bid package # (if applicable):		Total Contract Amount:	$		
Contract Award Date:		Contract amount for *Self Performed Work*:	$		
Estimated Start Date*:		Estimated Completion Date:			

*This will be the effective date of your OCIP coverage, unless notified otherwise

Description of work performed:				
For this project, will you be doing off-site work?	☐	Yes	☐	No
If yes, please describe?				

Workers' Compensation Section

Each Contractor and Subcontractor of every tier is required to submit a list of job/WC classifications and their respective estimated payrolls and man- hours for all employees that will be working at the project site. This information must be submitted for each contract /bid package. If this applies to your firm, please contact the SEWUP Department for a Supplemental Contractor Enrollment Form. Payroll Records are subject to audit by the Owner's Workers' Compensation and General Liability insurance carrier

Description of Work	WC Class Code	On-Site Man-hours	On-Site Straight Time Payroll
Example: Carpenter <$22/hour	5403	160	$3,040
	Totals		

Project Name:		**Contractor Name:**	

Expected Subcontractors: If any work is to be subcontracted under this Contract, please complete the following information for each Subcontractor. Use additional pages, if necessary.

Company Name:		Contact Person:	
ADDR			
City/State/Zip Code:			
Phone:		E Mail:	
Scope of Work:			
Contractor License		Contract Value:	
Est. Start Date:		Est. Completion Date:	

Company Name:		Contact Person:	
Address:			
City/State/Zip Code:			
Phone:		E Mail:	
Scope of Work:			
Contractor License		Contract Value:	
Est. Start Date:		Est. Completion Date:	

Company Name:		Contact Person:	
Address:			
City/State/Zip Code:			
Phone:		E Mail:	
Scope of Work:			
Contractor License		Contract Value:	
Est. Start Date:		Est. Completion Date:	

Company Name:		Contact Person:	
Address:			
City/State/Zip Code:			
Phone:		E Mail:	
Scope of Work:			
Contractor License		Contract Value:	
Est. Start Date:		Est. Completion Date:	

I DECLARE UNDER PENALTY OF PERJURY, UNDER THE LAWS OF THE STATE OF CALIFORNIA, THAT THE INFORMATION CONTAINED IN THIS DOCUMENT IS TRUE AND CORRECT. I HEREBY UNDERSTAND THAT ENROLLMENT IS CONTINGENT UPON RECEIPT AND ACCEPTANCE OF THIS FORM. SHOULD I SUBMIT AN INCOMPLETE FORM, KEENAN'S SEWUP DEPARTMENT WILL CONTACT ME AND MY FIRM WILL NOT BE ENROLLED UNTIL I PROVIDE ALL NECESSARY INFORMATION IN ITS ENTIRETY.

Print Name: ______________________ Title: ______________________

Signature: ______________________ Date: ______________________

Fax or Mail Completed Form To:
Keenan & Associates, 2355 Crenshaw Blvd., Ste. #200, Torrance, CA 90501
Attn: SEWUP Department
Phone (310) 212-3344, Fax (310) 787-8838

License No. 0451271

Keenan
Associates

STATEWIDE EDUCATIONAL WRAP UP PROGRAM

PROJECT SITE MONTHLY PAYROLL REPORT

District Name:	San Mateo County Community College District	Bid Pkg. #:	
Project Name:		REPORT # (For your Firm's use)	
Reporting Month:		Example:	February 2006
Company Name:		Dba Name:	
Under Contract With:		SEWUP Site Code*:	

*(Internal Use Only) To be assigned by the SEWUP Administrator.

Workers' Compensation Class Code	Work Description	Total Monthly Man-hours	Payroll*
	TOTALS	$	

I CERTIFY THAT THE INFORMATION REPORTED ABOVE IS TRUE AND ACCURATE. NOT REPORTING ACCURATE PAYROLL INFORMATION COULD AFFECT YOUR EXMOD - EXPERIENCE MODIFICATION RATING WITH THE WORKERS' COMPENSATION INSURANCE RATING BUREAU (WCIRB).

Signature:		Title:	
Print Name:		Date:	

*Do not include overtime wage rates, use straight time wage rates only, i.e., employee earns $20/hr. and works 10 hours in one day, you would report $200.00 ($20.00 x 10). If paid to third party (union) - exclude. If taxable to employee, then it is reported to WCIRB.

Fax or Mail Completed Form To:
Keenan & Associates, 2355 Crenshaw Blvd., Ste. #200, Torrance, CA 90501
Attn: SEWUP Department
Phone (310) 212-3344, Fax (310) 787-8838

License No. 0451271

STATEWIDE EDUCATIONAL WRAP UP PROGRAM

Contractor's Completion Notice

District Name:	San Mateo County Community College District
Project Name:	

IMPORTANT NOTIFICATION – PLEASE READ

Contractor or Subcontractor agrees to complete this form and return to Keenan & Associates upon completion or termination of work activities under this contract. Please include, with this form, any supporting documents for final contact value (if different from initial contract value).

Initial Contract Value:		
Final Contract Value:		
Last Day on Site*:		

**This would include work performed on final closeout or punch-list items and should not include warranty work.*

Contractor/Subcontractor Legal Name:			
Contractor/Subcontractor dba Name:			
Contractor License Number:			
Address:			
Representative's Name (Print):		Title:	
Signature:		Date:	

Fax or Mail Completed Form To:
Keenan & Associates, 2355 Crenshaw Blvd., Ste. #200, Torrance, CA 90501
Attn: SEWUP Department
Phone (310) 212-3344, Fax (310) 787-8838

License No. 0451271

Keenan & Associates

Rev. 04/06

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 10 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

A. Section includes summary of Work including:
1. Work Covered By Contract Documents
2. Bid Items, Allowances, and Alternates
3. Work Under Other Contracts
4. Future Work (N/A)
5. Work Sequence
6. Business Days and Hours
7. Cooperation of Contractor and Coordination with Other Work
8. Maintenance, Product Handling, and Protection
9. Partial Occupancy/Utilization Requirements
10. Contractor Use of Premises
11. Lines and Grades
12. Protection of Existing Structures and Utilities
13. Damage to Existing Property
14. Dust Control
15. Parking
16. Laydown/Staging Area
17. Permits
18. Punch List Verification
19. Actual Damages for Violations
20. Unfavorable Construction Conditions
21. Construction Site Access
22. Specification Data Sheets and Schedules
23. Site Administration
24. Products Ordered In Advance
25. District-Furnished Products
26. CEQA Mitigations
27. Storm Water Pollution Program- *See Section 01 35 00*

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Work comprises removal and replacement of the roofing systems on the following buildings: College of San Mateo buildings 1, 14 and 16, and Skyline College building 14. These campuses are located at College of San Mateo, 1701 Hillsdale Blvd., San Mateo, CA 94402 and Skyline College, 3300 College Drive, San Bruno, California 94066.

B. Furnish all labor, materials, equipment, services, permits, temporary controls and construction facilities, and all general conditions, seismic requirements, general requirements and incidentals required to complete the Work in its entirety as described in the Contract Documents and have a water tight roofing system at the end of construction. The Work includes, but is not necessarily limited to the following:

1. College of San Mateo

a. **Building 1**: Demolition of existing roof systems to base concrete, disposal and replacement of the roof per plans and specifications. Additional work at this location includes but, is not limited to:

~~1) Demolition and disposal of mechanical systems, duct work and mechanical supports, etc., as noted in plans.~~

2) Demolition and disposal of existing edge metal and vent assembly.

3) Asbestos abatement of caulking located at specific locations on this roof is included as part of this project.

(a) Selected contractor will need to submit a work plan for approval prior to the commencement of work.

(b) 4/17/15 additional sampling determined the caulking along the metal edging at the top of the clear story also contains asbestos.

4) Concrete coring of new overflow drains and penetrations per plans.
5) Provide and install walkway pads as indicated in plans.
~~6) Contractor will need to coordinate their work schedule with the mechanical contractor that will install new mechanical systems and ducting on the Building 1 roof.~~
7) Remove and re-secure existing satellite dish per plans.
8) Address existing exhaust fan units and existing weather station assembly per plans.
9) Contractor is to all complete work necessary to roof up to, around or under existing mechanical units per plans and specifications. Contractor is to coordinate efforts with the Construction Manager to minimize the down time of the HVAC units that supply air to occupied spaces.

b. **Building 14:** Demolition of existing roof systems to base concrete, disposal and replacement of the roof per plans and specifications. Additional work at this location includes but, is not limited to:
1) Address EAS system removal, re-install and additional work per plans.
2) Demolish and dispose of black radio cable that currently runs along the surface of the roof between the EAS horns and HVAC supply vent.
3) Demolish and dispose of abandoned Carillon chime system in the basement mechanical room in Building 14.
4) Concrete coring of new overflow drains and penetrations per plans.
5) Installation of new roof hatch. Patch and paint any resulting, exposed, damage related to this work.
6) Provide and install walkway pads as indicated in plans.

c. **Building 16**: Demolition of existing roof systems to base concrete, disposal and replacement of the roof per plans and specifications. Additional work at this location includes but, is not limited to:
1) Existing satellite dish will be removed and re-installed by others. Contractor to coordinate with the District's contractor regarding this work.
2) Concrete coring of new overflow drains and penetrations per plans.
3) Installation of new roof hatch. Patch and paint any resulting, exposed, damage related to this work.
4) Provide and install walkway pads as indicated in plans.

2. Skyline College

a. **Building 14**: Demolition of existing roof systems to base concrete, disposal and replacement of the roof per plans and specifications at Skyline College Building 14, Child Development Center (CDC). Additional work at this location includes but, is not limited to:
1) This building is utilized as a daycare center. Consequently, work will need to be completed while children are not present. The CDC has decided to close for two weeks to allow this work to be completed. The selected contractor will need to complete this scope of work between June 2, 2015 and June 12, 2015.
2) It's imperative that construction materials are not left behind and the clean-up process/quality assurance includes tarping playground structures/sand box and daily cleaning of the area. Contractor is obligated to perform daily clean-up of entire grounds to remove all construction related debris, scraps, nails, materials, etc. Prior to facility re-opening Contractor is obligated to perform a final walk through with a magnet sled to ensure all metal debris, as well as previously identified items, are removed from the play yards, perimeters and entrance areas. District personnel will inspect the areas for acceptable cleaning. If any construction related debris is found the District will hire an outside cleaning crew and back charge the Contractor for cleaning fees.
3) Demolish, dispose of and replace, including but not limited to: deteriorated deck boards, drain strainer assemblies, gutters, sheathing, fascia, etc. Obtain District's approval of the extent of demolition prior to beginning this scope of work.
4) Demolition and disposal of mechanical systems, duct work and mechanical sleepers, etc., as noted in plans.
5) Demolition, disposal, and installation of new roof hatch and ladder per plans. Patch and paint any resulting, exposed, damage related to this work.
6) Remove, relocate and re-install security lights on posts, complete work per plans.
7) **Existing antenna, ~~public safety radio repeater~~ San Bruno Police Department radio antenna, MUST remain operational during construction.** The Contractor is to communicate through their CPM schedule expected dates for such disconnecting and reconnecting. The Contractor must submit a written request through the Construction Manager (Thomas Fakner) to coordinate such services. Telecommunications Engineering Associates requires 48hr advance notification.

8) Provide and install walkway pads as indicated in plans.
9) Unit prices and Work Allowances are required for plywood substrate (1,000 SF included in base bid), built-up roofing walkway pads (25 LF included in base bid), facia (75 LF included in base bid), and plywood deck roof drains (2 locations included in base bid) and shall be entered on the bid form (Section 00 41 00). Refer to Section 01 22 00, Unit Prices, and 01 21 00, Allowance, for further details. The unit prices provided will be used to add to or deduct from the Contract Sum for the actual quantities replaced for the materials listed above.

3. Clean existing drain bowls after drain and roofing is complete. Clean all drains and overflow piping debris and clogs such that the system is free flowing, utilize "Roto-rooters" type equipment down from the roof to the storm sewer connections for each drain. Owner's representative must be present during cleaning.
4. Coordination with other contractors working at these campuses and their Subcontractors. Coordination with campus Facilities Departments and the District, obtaining necessary permits and complying with permit and environmental conditions, project startup and testing, site restoration and cleanup.
5. Provide pedestrian controls and fencing to limit access to work areas. Provide detour signage where directed. Refer to site logistics plan for all staging, storage, parking, access, fencing, signage, etc. and for additional information and requirements.
6. Provide complete set of as-built drawings at project closeout.
7. College of San Mateo Buildings 1, 14 and 16 roofs: Unit pricing and a Work Allowance are required for single-ply roofing walkway pads (250 LF included in base bid) and shall be entered on the bid form (Section 00 41 00). Refer to Section 01 22 00, Unit Prices, and 01 21 00, Allowance, for further details. The unit prices provided will be used to add to or deduct from the Contract Sum for the actual quantities replaced for the materials listed above.

C. The Work of this Contract comprises construction of all the Work indicated, described in the Specifications, or otherwise required by the Contract Documents.
D. Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by Contract Documents shall rest with Contractor until Final Acceptance of the Work.
E. Contractor's use of the premises for Work and storage is limited to the area indicated.
F. Contractor shall be solely responsible for all utilities (including without limitation electricity, water, gas, etc.) at the Site.
G. Contractor shall carefully remove, in a manner to prevent damage, all materials and equipment specified or indicated to be salvaged and reused or to remain the property of District. Contractor shall store and protect salvaged items specified or indicated to be reused in the Work.
   a. Contractor may furnish and install new items instead of those specified or indicated to be salvaged and reused, in which case such removed items will become Contractor's property.
H. Existing materials and equipment removed by Contractor shall not be reused in the Work, except where so specified or indicated.
I. Salvaged items not to be reused in the Work, but to remain District's property, shall be delivered by Contractor in good condition to District at the Facilities Maintenance Center, 1700 West Hillsdale Blvd, San Mateo or 3300 College Drive, San Bruno.
   a. Any items specified or indicated to be salvaged which are damaged in removal, storage, or handling through carelessness or improper procedures shall be replaced by Contractor in kind or with new items.

1.3 BID ITEMS, ALLOWANCES, AND ALTERNATES

A. Any Bid Item may be deleted from the Work and Contract Sum, in total or in part, prior to or after award of Contract without compensation in any form or adjustment of other Bid Items or prices therefore.

B. Payment of all items is subject to provisions of Contract Documents, including without limitation Section 01 29 00 (Measurement and Payment).
C. For all Bid Items, furnish and install all work indicated and described in Specifications and all other Contract Documents, including connections to existing systems. Work and requirements applicable to each individual Bid Item, or unit of Work, shall be deemed incorporated into the description of each Bid Item..
D. Descriptions of Lump Sum Items (listed by Bid Item Numbers). Bid items are not intended to be exclusive descriptions of work categories and Bidder shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item as shown and specified:
   1. Bonds and Insurance. The lump sum price paid under this item shall be full payment for all Bonds and Insurance required by Document 00 71 00 (General Conditions).

2. Safety Plan and Programs. The lump sum price paid under this item shall be full payment for providing the Safety Plan and programs as required by Section 01 56 00 (Site Security and Safety) and 00 71 00 (General Conditions).
3. Mobilization/Demobilization. The lump sum price paid under this item shall be full payment for initial mobilization at Project commencement (50% to be paid then), and cleanup and demobilization at Final Completion of Work to be completed (50% to be paid then).
4. N/A
5. Installation, Operation, and Maintenance Manuals, Record Drawings-. The lump sum price paid under this item shall be full payment for preparation of installation, operation, and maintenance manuals.
6. All Work of Contract Documents other than Work separately provided for under other Bid Items. The lump sum price paid under this item shall be full payment for all Work of Contract Documents other than Work separately provided for under other Bid Items, including cleaning, startup, and testing, submittals, and all other general conditions, general requirements, and seismic requirements.

E. Allowances:
1. Allowance work shall be done as Change Orders and as specified in Section 01 26 00 (Modification Procedures). Identify Allowance Items (See Document 00 41 00 [Bid Form]) work on the Progress Schedules and on Applications for Payment.
2. The Amount given on Document 00 41 00 (Bid Form) under each Allowance Item is the sum of money set aside for each Allowance Item. These amounts shall be included in the Contract Sum on the Bid Form.
3. If the cost of work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of work actually done.
4. Scope of Allowances:
   a. N/A

F. Alternates:
1. N/A
2. N/A

1.4 WORK UNDER OTHER CONTRACTS

Work at the site performed by others includes the following:
1. College of San Mateo
   a. Installation of new mechanical system(s) and ducting at CSM B1.
   b. Installation of new EAS horn system and support structure at CSM B14.
   c. Removal and replacement of satellite dish at CSM B16.
   d. College of San Mateo Colonnades and District Office Deck Waterproofing Project.
   e. Districtwide Utility Measurement & Verification Project.

1.5 FUTURE WORK

N/A

1.6 WORK SEQUENCE

A. Construct Work in stages and at times to accommodate District operation requirements during the construction period; coordinate construction schedule and operations with District.
1. Contractor is notified that CSM buildings 1, 14 and 16 will be occupied during construction. If the contractor's work will require any of these buildings to be vacant at any time during construction the contractor will need to indicate this work on the schedule and submit for approval prior to the commencement of work.
2. Contractor is notified that work that will generate disruptive noise will need to be completed during hours when there is less activity on campus, see paragraph 1.7.B (Business Days and Hours).
3. Contractor is notified the asbestos abatement work on CSM B1 and the demolition of roofing materials on Buildings 14 and 16 need to be completed between June 2, 2015 and June 12, 2015.

B. Contractor shall not have access to the **premises** before **June 2**, 2015 except as follows: between May 23, 2015 and June 1, 2015 Contractor may test roof drains and complete other "quiet" mobilization work **while final exams are in process.** (The warning beeping from work trucks is considered "noisy" work.) All other work would need to be approved by the District in advance. No Saturday classes are scheduled the first two weeks of June, June 2, 2015 and June14, 2015.

C. Contractor acknowledges that shoring may be required to maintain a safe excavation and protect facilities, including both existing and recently constructed under this Contract. All expenses for shoring of excavations shall be included in the appropriate bid items.

1.7 BUSINESS DAYS AND HOURS

A. The District's Regular Business Days and hours for construction personnel, such as facilities managers, architects, inspectors, and maintenance personnel, are Monday-Friday inclusive, 7:30 a.m. - 4:30 p.m. local time.
B. Contractor is advised that during this **Construction Window** District students and faculty are on campuses Monday – Thursday, 8:00 a.m. - 10:00 p.m., with generally less activity between 3:00 p.m. and 6:00 p.m., all day on Fridays and Saturday 8:00 a.m. – 1:00 p.m. No Saturday classes are scheduled the first two weeks of June, June 2, 2015 and June14, 2015.
C. Contractor may work at the Site on weekends or holidays if it notifies District in writing at least 48 hours in advance. In the case of Work by Contractor after normal working hours or on weekends or holidays, Contractor shall be responsible for any additional inspection costs incurred by the District. Such costs may be withheld from any succeeding monthly progress payment.
D. See Section 00 73 00 Supplementary Conditions for College Activities and Events which may also result in Contractor's inability to work.
E. Contractor shall protect facilities against deleterious substances and damage.
F. Construction window: June 2, 2015 – August 14, 2015

1.8 COOPERATION OF CONTRACTOR AND COORDINATION WITH OTHER WORK

A. Coordinate with District and any District forces, or other contractors and forces, as required by Document 00 71 00 (General Conditions), paragraph 6.
B. Contractor shall coordinate the construction schedule with the regular daily operations schedule of the District and Campus for minimal interruption during utility service installations/modifications. All shut-downs required to perform the work and temporary facilities/utilities to affected District constituencies or other projects shall be coordinated by the Contractor and included in the base scope/cost of the project for normal power service installation.
C. Noise: Construction activities are to comply with applicable local noise ordinance and applicable Cal-OSHA regulations.
D. Connections to Existing Facilities. Unless otherwise specified or indicated, Contractor shall make all necessary connections to existing facilities, including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electric. In each case, Contractor shall receive permission from District or the owning utility prior to undertaking connections.
E. Substantial completion: Fall semester begins August 17, 2015 therefore; substantial completion must be achieved by:
    a. CSM Building 1 – August 14, 2015
    b. CSM Building 14 – August 14, 2015
    c. CSM Building 16 – August 14, 2015
    d. SKY Building 14 – June 12, 2015
F. Prior to commencement of work at CSM Building 1 selected contractor shall submit a detailed work plan per Specification Section 02080 (Asbestos Abatement) for approval by the District's contracted Industrial Hygienist.

1.9 MAINTENANCE, PRODUCT HANDLING, AND PROTECTION

A. Transport, deliver, handle, and store materials and equipment at the Site in such a manner as to prevent the breakage, damage or intrusions of foreign matter or moisture, and otherwise to prevent damage.
B. Hazardous substance compliance: Provide District with copies of the OSHA Material Safety Data Sheets (MSDS) for all products containing a hazardous substance, examples: Adhesives, paints, sealants, and the like.
C. Packaging: Provide packaged material in manufacturer's original containers with seals unbroken and labels intact until incorporated into the Work.
D. Remove all damaged or otherwise unsuitable material and equipment promptly from the Site.
E. Protection: Protect all finished surfaces.
F. Asbestos Removal**:** If, during the progress of the Work, suspected asbestos-containing products are identified, Contractor shall stop work in the affected area and immediately notify the Owner. Owner shall

either directly engage an asbestos removal contractor to verify the materials and, if necessary, encapsulate, enclose, or remove and dispose of all asbestos in accordance with current regulations of the Environmental Protection Agency and the U. S. Department of Labor – Occupational Safety and Health Administration, the state asbestos regulating agency, and any local government agency; or Owner shall direct Contractor to do the same as a Change Order to the contract. The Contractor shall take all measures to avoid and/or mitigate delays due to Hazardous Materials/Waste finds such as: avoiding the area of the find and proceeding with other work on the project; developing "work around" plans; and documenting his best efforts to avoid and/or mitigate delays.

1. Asbestos Removal Subcontractor's Qualifications. The Subcontractor for asbestos removal shall be regularly engaged in this type of activity and shall be familiar with the regulations that govern this work. The Subcontractor shall demonstrate to the satisfaction of District that it has successfully completed at least three asbestos removal projects that it has the necessary staff and equipment to perform the work, and that it has an approved site for disposal of the asbestos. Liability insurance covering the asbestos abatement work shall be provided as specified in the Supplementary Conditions.
2. Asbestos Removal Methods. The asbestos removal Subcontractor shall submit a work plan of its proposed removal procedure to District before beginning work and shall certify that the methods are in full compliance with the governing regulations. The work plan shall cover all aspects of the removal, including health and safety of employees and building occupants, hygiene facilities, employee certification, clearance criteria, transportation and disposal, enclosure techniques, and other techniques appropriate for the proposed work.

G. Cost of maintenance of systems and equipment prior to either Substantial Completion or filing of a Notice of Completion will be considered as included in prices bid and no direct or additional payment will be made therefore.

H. Contractor is to complete, and if necessary develop, maintenance logs for each piece of major equipment installed and/or stored until project close out. This equipment includes:

1) N/A
2) N/A

I. Maintenance logs and all related contract close-out documentation will be submitted to the District's Representative no more than thirty (30) days after the date of Substantial Completion. A Notice of Completion will not be filed until all contract close-out documents are submitted and approved.

1.10 PARTIAL OCCUPANCY/UTILIZATION REQUIREMENTS

A. Allow District to take possession of and use any completed or partially completed portion of the Work during the progress of the Work as soon as is possible without interference to the Work.

B. Possession, use of Work, and placement and installation of equipment by District shall not in any way evidence the completion of the Work or any part of it.

C. Contractor shall not be held responsible for damage to the occupied part of the Work resulting from District occupancy.

D. Make available, in areas occupied, on a 24-hour per day and 7-day per week basis if required, any utility services, heating, and cooling in condition to be put in operation at the time of occupancy.

1. Responsibility for operation and maintenance of said equipment shall remain with Contractor.
2. Make, and District shall certify, an itemized list of each piece of equipment so operated with the date operation commences.
3. Itemized list noted above shall be basis for commencement of warranty period for equipment.
4. District shall pay for utility cost arising out of occupancy by District during construction.

E. Use and occupancy by District prior to acceptance of Work does not relieve Contractor of its responsibility to maintain insurance and bonds required under the Contract until entire Work is completed and accepted by District.

F. Prior to date of Final Acceptance of the Work by District, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to defective materials or workmanship or to operations of Contractor, shall be made at expense of Contractor, as required in Document 00 71 00 (General Conditions).

G. Use by District of Work or part thereof as contemplated by this Section 01 10 00 shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Contractor of any responsibilities under Contract, nor act as waiver by District of any of the conditions thereof.

H. District may specify in the Contract Documents that portions of the Work, including electrical and mechanical systems or separate structures, shall be substantially completed on dates described in paragraph

1.6 of this Section 01 10 00, if any, prior to substantial completion of all of the Work. Contractor shall notify District's Representative and Architect/Engineer in writing when Contractor considers any such part of the Work ready for its intended use and substantially complete and request District to issue a Certificate of Substantial Completion for that part of the Work.

1.11 CONTRACTOR USE OF PREMISES

A. Confine operations at Site to areas permitted by Contract Documents, permits, ordinances, and laws.
B. Do not unreasonably encumber Project Site with materials or equipment.
C. Assume full responsibility for protection and safekeeping of products stored on premises.
D. Move any stored products that interfere with operations of District or other contractor.
E. Parking, storage, staging, and work areas shall be coordinated with the District, and comply with all other Contract documents requirements.
    a. Parking:
        1) CSM – Socrates, Lot 4
        2) SKY – Lot L

1.12 LINES AND GRADES

A. All Work shall be done to the lines, grades, and elevations indicated on the Drawings.
B. District shall provide basic horizontal and vertical control points to be used as datums for the Work. All additional survey, layout, and measurement work shall be performed by Contractor as a part of the Work.
C. Contractor shall provide at its cost an experienced instrument person, competent assistants, and such instruments, tools, stakes and other materials required to complete the survey, layout, and measurement work. In addition, Contractor shall furnish at its cost competent persons and such tools, stakes, and other materials as District (and/or any Architect/Engineer) may require in establishing or designating control points, or in checking survey, layout, and measurement work performed by Contractor.
D. Contractor shall keep District informed, a reasonable time in advance, of the times and places at which it wishes to do survey/layout work, so that any checking deemed necessary by District may be done with minimum inconvenience to District and minimum delay to Contractor.
E. Contractor shall remove and reconstruct Work which is improperly located.

1.13 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The Drawings may indicate existing above- and below-grade structures, drainage lines, storm drains, sewers, water, gas, electrical, hot water, and other similar items and utilities that are known to District.
B. Contractor shall locate these known existing installations before proceeding with trenching or other operations which may cause damage, shall maintain them in service where appropriate, and shall repair any damage to them caused by the Work, at no increase in Contract Sum.
C. Additional utilities whose locations are unknown to District are suspected to exist. Contractor must be alert to their existence. If additional utilities are encountered, Contractor must immediately report to District for disposition.
D. In addition to reporting, if a utility is damaged, Contractor must take appropriate action as provided in Document 00 71 00 (General Conditions).
E. Additional compensation or extension of time on account of utilities not indicated or otherwise brought to Contractor's attention including reasonable action taken to protect or repair damage shall be determined as provided in Document 00 71 00 (General Conditions).

1.14 DAMAGE TO EXISTING PROPERTY

A. Contractor will be responsible for any damage to existing structures, Work, materials, or equipment because of its operations and shall repair or replace any damaged structures, Work, materials, or equipment to the satisfaction of, and at no additional cost to, District.
B. Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.
C. Contractor shall be responsible for all damage to streets, roads, curbs, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or workers to or from the Work. Contractor shall make satisfactory and acceptable arrangements with the agency having jurisdiction over the damaged property concerning its repair or replacement.

1.15 DUST CONTROL

A. Contractor shall take reasonable measures to prevent unnecessary dust. The following items shall be specifically implemented to control dust:
   1. All construction locations with active excavation shall be watered at least twice daily.
   2. Cover all trucks hauling soil, sand, and other loose materials; or require all trucks to maintain at least two feet of freeboard.
   3. Pave, apply water daily, or apply non-toxic soil stabilizers on all un-paved access roads, parking areas, and staging areas at construction site.
   4. Sweep daily with water sweepers all paved access roads, parking areas, and staging areas at construction sites during earthwork activities.
   5. Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.)
   6. Limit the speed of all construction vehicles to 5 miles per hour while on un-paved roads at the Site.

B. Buildings or operating facilities which may be affected adversely by dust shall be adequately protected from dust. Existing and new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

C. Building Interiors: provide dust barriers, walk-off pads, etc. to minimize dust infiltration in buildings. If required, the Contractor will clean interior common areas (e.g., corridors, lobbies) as needed during each work day.

1.16 PARKING

Parking will be provided in designated areas at no cost to the Contractor.

1.17 LAYDOWN/STAGING AREA

Contractor shall utilize the area indicated on the Drawings for storage of all construction materials. This area shall be fenced and locked by Contractor for security purposes.

a. Laydown area:
   1) CSM – Socrates, Lot 4
   2) SKY – Lot L

1.18 PUNCH LIST VERIFICATION

A punch list examination will be performed upon Substantial Completion of Work. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, at District's discretion, Contractor shall reimburse District for these visits.

1.19 UNFAVORABLE CONSTRUCTION CONDITIONS

During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall confine its operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by Contractor to perform the Work in a proper and satisfactory manner. The Contractor will employ BEST practices to manage the construction site during inclement weather.

1.20 CONSTRUCTION SITE ACCESS

Contractor shall at all times limit access to the Site to necessary personnel only. All personnel associated with construction of the Project shall enter the site through Contractor's access gate, at the location indicated on the Drawings. Access for construction personnel shall be limited to regular work hours, unless prior approval is obtained from the District. All mail and deliveries (Federal Express, equipment, etc.) shall be sent to a separate address (at Contractor's gate), specifically arranged by Contractor for the Project. Contractor is responsible for providing adequate signage (subject to District approval) to alert delivery persons to the project site. The District will not receive or forward Contractor mail or deliveries.

1.21 SPECIFICATION DATA SHEETS AND SCHEDULES

Specifications may have data sheets and schedules as part of specific specification sections. Locations for data entries on the data sheets and schedules may be left blank intentionally. Each line where data may be entered on the

data sheet has a selection box in the column "Chk". When the box for a line is checked and no data is entered in the respective line, this indicates that no data is required for that line of the data sheet.

Other standard codes which apply to the Work are designated in the Specifications.

1.22 SITE ADMINISTRATION

Contractor shall be responsible for all areas of the Site used by it and by all Subcontractors in the performance of the Work. Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to District or others. Contractor shall have the right to exclude from the Site all persons who have no purpose related to the Work or its inspection, and may require all persons on the Site to observe the same regulations as Contractor requires of its employees.

1.23 EROSION CONTROL

A. SCOPE OF WORK

1. General: Provide all materials, equipment and labor necessary to furnish and install straw wattles, silt fence barriers, hydroseed, or other Best Management Practices (BMP's) at locations shown on the Contractors Storm Water Pollution Prevention Plan. See Section 01 35 00 for further detail.
2. Storm Water Pollution Prevention Plan: Prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) tailored to the Contractor's operations, methods and equipment. Comply with State Water Resources Control Board requirements. The SWPPP shall be reviewed and approved by the authority having jurisdiction prior to the start of work. The SWPPP shall be tailored to the contractor's approach to the work in this contract. The Contractor shall as a minimum address:
   a. Cut and fill operations
   b. Temporary stockpiles
   c. Vehicle and equipment storage, maintenance and fueling operations
   d. Concrete, plaster, mortar and paint disposal
   e. Dust control
   f. Tracking of dirt and mud, on and off of site, and adjacent streets.
   g. Pipe flushing and protection of drainage facilities both new and existing, on and off site as required by State Water Resources Control Board.

1.01 QUALITY ASSURANCE

. General: Comply with governing codes and regulations of the State Water Resources Control Board.

1.03 SUBMITTALS

A. Notice Of Intent (NOI): The Contractor shall submit a NOI to the State Water Resources Control Board in the name of San Mateo County Community College District prior to beginning work on site if required.

PART 2 PRODUCTS

2.1 PRODUCTS ORDERED IN ADVANCE

N/A

2.2 RESPONSIBILITIES FOR DISTRICT-FURNISHED PRODUCTS

A. District's Responsibilities:
   1. Arrange for and deliver District-reviewed Shop Drawings, Product Data, and Samples, to Contractor.
   2. Arrange and pay for delivery to site.
   3. On delivery, inspect products jointly with Contractor.
   4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:
   1. Review District-reviewed Shop Drawings, Product Data, and Samples.

2. Receive and unload products at site; inspect for completeness or damage jointly with District.
3. Handle, store, install, and finish products.
4. Repair or replace items damaged after receipt.
5. Install into Project per Contract Documents.

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 21 00

ALLOWANCE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-specified work to be performed only at the determination and direction of the Owner/District.

1.2 RELATED SECTIONS

A. Section 01 29 00 - Measurement and Payment.
B. Section 01 32 19 – Submittal Procedures.
C. Section 01 22 00 – Unit Prices
D. Document 00 41 00 – Bid Form

1.3 OWNER'S ALLOWANCE FOR NON-SPECIFIED WORK

A. Include in the Contract, a stipulated sum/price of 10 % of the total of bid items #1 - #9 for non-specified items.
B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Change Orders authorizing expenditure of funds from this Allowance.
C. Funds will be drawn from Allowance only by approval of the Owner and authorization of Change Orders by the Architect.
D. At closeout of Contract, funds remaining in Allowance will be credited to Owner by Changer Order.

1.4 SPECIFIED WORK ALLOWANCE

A. Include in the Contract, a stipulated sum/price for bid items #4 (CSM Bldg. 1, 14 &16 roofs- Single-Ply Roofing Walkway Pads), 6 (SKY Bldg. 16 – Plywood Substrate), 7 (SKY Bldg. 14 – Built-up Roofing Walkway Pads), 8 (Plywood Deck Roof Drains), and 9 (SKY Bldg. 14 – Fascia).
B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Change Orders authorizing expenditure of funds from this Allowance.
C. Funds will be drawn from Allowance only by approval of the Owner and authorization of Change Orders by the Construction Manager and Engineer of Record per Section 01 29 00 (Measurement and Payment), Section 01 22 00 (Unit Prices) and Section 00 41 00 (Bid Form).
D. At closeout of Contract, funds remaining in Allowance will be credited to Owner by Changer Order.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01 22 00
UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 01 26 00 "Modification Procedures" for procedures for submitting and handling Change Orders.
2. Document 00 41 00 “Bid Form” for specific quantities included in each base bid.
3. Section 01 21 00 “Allowance” for procedures to follow in order to utilize Work Allowance funds.

1.2 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

A. Unit prices shall be included in each Work Allowance bid. Refer to ‘Schedule of Unit Prices’ Article in Part 3 of this Section for quantities.

B. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

E. Contract sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.

1. Unit prices shall apply to both deductive and additive variations of quantities, unless otherwise specified.
2. Unit prices in the Contract shall remain in effect until date of final completion of the entire Work.

F. The estimated quantities of materials to be replaced that are identified on the bid form, Document 00 41 00, will be field verified during construction by the Contractor, Engineer of Record and Construction Manager for documentation, recommendation to and approval by the District. These values will used per paragraph 1.2 of this Section and Section 01 21 00, Allowance, to account for and utilize funds for the replacement of the identified material.

1. Example: 1000 SF of plywood substrate are estimated as needing to be replaced at Skyline Building 14. If only 500 SF are replaced, a Change Order for this reduced value of work will be approved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1 – Plywood Substrate:

1. Description: Replace plywood substrate with like in kind where dry rot is observed. Dry rot areas to be determined by the Building Envelope Engineer and Construction Manager. Minimum plywood thickness is 1/2 inch. Unit price applies at low slope roofing.
2. Unit of Measurement: Square Feet, including demolition of existing, fasteners and labor.
3. Quantity: Refer to Document 00 41 00 “Bid Form” for quantity in base bid.

B. Unit Price No. 2 – Single-Ply Roofing Walkway Pads:
1. Description: Provide walkway pads in accordance with Section 07 54 00 “Thermoplastic Membrane Roofing.”
2. Unit of Measurement: Linear feet.
3. Quantity: Refer to Document 00 41 00 “Bid Form” for quantity in base bid.

C. Unit Price No. 3 – Fascia:
1. Description: Replace fascia bordering equipment well for Skyline Building 14 with like in kind where dry rot or other damage, such as warping is observed. Dry rot areas to be determined by the Building Envelope Engineer and Construction Manager.
2. Unit of Measurement: Linear feet.
3. Quantity: Refer to Document 00 41 00 “Bid Form” for quantity in base bid.

D. Unit Price No. 4 – Roof Drains:
1. Description: Provide Unit Price to demolish and provide single drain. Connection to existing drain leaders to be included. Demolition and provision of strainer, clamping ring, and associated components are in base bid.
2. Unit of Measurement: Per location.
3. Quantity: Refer to Document 00 41 00 “Bid Form” for quantity in base bid.

E. Unit Price No. 5 – Built-up Roofing Walkway Pads:
1. Description: Provide built-up roofing walkway pads in accordance with Section 07 51 13 “Built-up Asphalt Roofing.”
2. Unit of Measurement: Linear feet.
3. Quantity: Refer to Document 00 41 00 “Bid Form” for quantity in base bid.

END OF SECTION

SECTION 01 74 00

CLEANING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Progress Cleaning
B. Final Cleaning

1.2 PROGRESS CLEANING

A. Contractor shall perform periodic cleaning to ensure that any streets and other District and public properties are maintained free from accumulation of waste materials, dust, mud, and debris.
B. Where required, Contractor shall wet down surfaces to lay dust and prevent the blowing of dust to nearby residences or public properties.
C. Contractor shall keep all streets clean and free of dust, mud, and debris resulting from Contractor's operations. Daily cleanup throughout the job will be necessary as Contractor progresses with its Work, but extra attention to cleanup shall be made prior to weekends and holidays. Without limiting the foregoing, Contractor shall remove trench spoil along traveled ways daily; grade and vacuum broom surfaces initially where applicable and later water flush with high-pressure sprays, being careful to avoid downstream contamination.
D. All dust, mud, spoils, and construction debris shall be removed daily from all roadways, ditches, shoulders, and private property (fills or spoils placed on private property at private property owner's written request excepted).
E. Disposal of Materials:
    1. As part of the scope of Work included within the Contract Sum, Contractor shall be fully responsible for disposing of all construction debris, dirt and spoils resulting from the Work.
    2. All waste materials, debris, dirt and rubbish shall be disposed of at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations.
    3. Contractor is cautioned that the County of San Mateo and cities within the county have regulations governing the disposal of rubble, broken pavement, and similar materials.
    4. Contractor shall become familiarized with the requirements of the agency having jurisdiction over any contemplated disposal site and shall comply with all such requirements.
    5. The contractor shall estimate, log and submit regular reports to the District, an estimate of quantities (e.g. tonnage) of waste materials disposed of for compliance with AB75. Documentation requirements including the nature of materials, destination, volume and tonnage, shall be submitted as follows:
        a. Up-to-date copies of the Waste Reporting Log (Exhibit A of this Section 01 74 00) shall be submitted with each payment application per Section 01 29 00 (Measurement and Payment) paragraph 1.7.C.8.
        b. The Contractor shall submit a cumulative report summarizing the nature of materials, destination, volume and tonnage of materials disposed for the preceding calendar year to the District's Representative by January 31st of each year or at the end of the project as part of the contract closeout.
F. All excess soil from performance of Work shall be disposed at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations. If Contractor elects to dispose of soil on any private property, prior to any dumping, a letter allowing such dumping shall be obtained from the property owner and presented to District. Contractor is advised that the property owner is required to obtain a fill permit from the applicable government agency (ies). In addition, placement of fill in wetland areas is subject to permit procedures of the US Army Corps of Engineers. At the completion of Work, a letter from each affected property owner will be required releasing Contractor**,** San Mateo County, District and any District consultant from future liability.
G. If Contractor does not properly clean the Site, in the opinion of District, then District shall have the option of using outside equipment to perform the cleanup and such cost will be withheld from the Contract Sum.
H. Contractor will take care to mitigate dust during interior renovation activities through proper use of dust controls. Dust controls will include, but not be limited to: dust barricades, walk-off mats, negative air machines and daily custodial clean-up employed by the Contract and at not additional cost to the District

I. Contractor is obligated to perform daily clean-up of entire grounds to remove all construction related debris, scraps, nails, materials, etc. Prior to facility re-opening Contractor is obligated to perform a final walk through with a magnet sled to ensure all metal debris, as well as previously identified items, are removed from the play yards, perimeters and entrance areas. District personnel will inspect the areas for acceptable cleaning. If any construction related debris is found the District will hire an outside cleaning crew and back charge the Contractor for cleaning fees.

1.3 FINAL CLEANING

A. Contractor shall execute final cleaning prior to final inspection, using only properly skilled workers.
B. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed interior and exterior finished surfaces.
C. Repair, patch, and touch up marred surfaces to match adjacent finishes.
D. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
E. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment operated during construction, clean ducts, blowers and coils of units operated without filters during construction.
F. Clean Site; mechanically sweep paved areas.
G. Remove waste and surplus materials, rubbish, and construction facilities from Site.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

WASTE REPORTING LOG FOLLOWS ON NEXT PAGE

EXHIBIT A

WASTE REPORTING LOG

COLLEGE OF SAN MATEO AND SKYLINE COLLEGE ROOF REPLACEMENT PROJECT
Contract Number **86708**

To: The San Mateo County Community College District
Attention: **[**Point of Contact**]**
[Insert POC address]
Telephone: (650) [_____] **Fax:** (650) [_____]

From: _____
_____
_____

DISPOSAL DATE	NATURE OF MATERIALS DISPOSED	DESTINATION	VOLUME	TONNAGE	% RECYCLED

- Per Section 01 29 00 (Measurement and Payment) paragraph 1.7.C.8. a current and up-to-date copy of this log is to be submitted with each Application for Payment.

- Per Section 01 74 00 (Cleaning) paragraph 1.2.E.5 a summary report for each calendar year shall be submitted to the District's Representative by January 31st of each year or at the end of the project as part of the contract closeout. The data shall be summarized by 'Nature of Materials Disposed' and 'Destination' for the entire calendar year.

SECTION 02 41 22

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Demolition and removal of selected portions of a building or structure.

B. Demolition and removal of selected site elements.

C. Repair procedures for selective demolition operations.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless otherwise indicated.

B. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Architects and owners, and other information specified.

B. Proposed dust-control and noise-control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation.
   1. Identify options if proposed measures are later determined to be inadequate.

C. Schedule of Selective Demolition Activities:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
   2. Interruption of utility services.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Construction and use of temporary elevators.
   5. Locations of temporary partitions, if required, and means of egress.

6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's occupancy of completed Work.

D. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

E. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

D. Predemolition Conference: Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.6 REGULATORY REQUIREMENTS

A. Comply with authorities having jurisdiction over selective demolition operations, including:
1. California Occupational Safety and Health Administration (CalOSHA)
2. Department of Transportation (DOT)
3. Department of Health Services (DOHS)
4. Environmental Protection Agency (EPA)
5. California Contractors State License Board

1.7 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area.
1. Conduct selective demolition so Owner's operations will not be disrupted.
2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
3. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

B. Owner assumes no responsibility for condition of areas to be selectively demolished.

C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

D. Storage or sale of removed items or materials on-site will not be permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

F. Weather Limitations: Proceed with roofing removal preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

1.8 SEQUENCING

A. Coordinate the sequencing of roofing demolition work with roofing system applicator to ensure that the roofing replacement will promptly follow demolition work.

B. Provide and install temporary protection during the period between demolition and replacement work.

C. Take steps necessary to ensure that the building is watertight at the end of each days work and when inclement weather is forecast.
   1. Failure to adequately protect the building and its contents from weather will result in the Owner installing temporary protection at the Contractor's expense.

1.9 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials to repair damage caused during Construction.
   1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   2. Use a material whose installed performance equals or surpasses that of existing materials.

B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Visit the project to survey existing conditions and correlate with Contract Document requirements indicated to determine extent of selective demolition required.
   1. Perform visual survey accompanied by the Owner or the Owner's Representative.
   2. Mark interface surfaces as required to enable workmen to identify items scheduled for demolition and those scheduled to remain.

B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

C. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 ASBESTOS

A. Asbestos containing material (ACM) is present at edge caulking and at clerestory window caulking at CSM Buildings 1, ~~14, and 16~~. Refer to abatement protocol by Owner for remediation.

3.3 UTILITY SERVICES

A. Existing Utilities: Maintain services and protect them against damage during selective demolition operations.

B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

C. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
   1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.

D. Utility Requirements: Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PREPARATION

A. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with roofing removal work that could affect indoor air quality or activate smoke detectors in the ductwork.

B. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

C. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

D. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

E. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
3. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
4. Protect existing site improvements, appurtenances, and landscaping to remain.

F. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment below selective demolition where applicable.

G. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Provide temporary weathertight enclosure for building exterior.
2. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

H. Protect building to have roofing removed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roofing removal operations.

3.5 POLLUTION CONTROLS

A. Dust Control: Comply with the Owner’s and applicable governing environmental protection regulations.

B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by enclosed chute, hoist, or other pre-approved device that will convey debris to grade level in a controlled descent.

3.6 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated.

B. Use methods required to complete the Work within limitations of governing regulations.

C. Proceed with selective demolition systematically, from higher to lower level.

D. Neatly cut openings and holes plumb, square, and true to dimensions required.

E. Use cutting methods least likely to damage construction to remain or adjoining construction.
   1. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
   2. Temporarily cover openings to remain.
   3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

F. Do not use cutting torches until work area is cleared of flammable materials.
   1. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations.
   2. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
   3. Maintain adequate ventilation when using cutting torches.

G. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

H. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

I. Dispose of demolished items and materials promptly.

J. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

K. Existing Facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.

L. Existing Items to Remain: Protect construction to remain against damage and soiling during selective demolition.
   1. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

M. Roofing: Remove no more existing roofing than can be covered in one day by new roofing.

3.7 ROOFING TEAR-OFF

A. General: Notify Owner each day of extent of roofing tear-off proposed for that day.

B. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing using a power broom.

C. Remove accessories from roofing membrane.

D. Roofing Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.

3.8 DECK PREPARATION

A. Inspect deck after tear-off of roofing system.

B. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if moisture condenses under the plastic sheet or if asphalt test sample foams or can be easily and cleanly stripped after cooling.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner’s Representative. Do not proceed with installation until directed by Owner’s Representative.

3.9 EXISTING BASE FLASHINGS

A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
   1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

3.10 PATCHING AND REPAIRS

A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Promptly replace items demolished that were not so scheduled to the satisfaction of the Owner.

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
   1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.

D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
   1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
   2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.

3.11 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials and dispose of at designated spoil areas on Owner's property.

D. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.12 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations.

B. Return adjacent areas to condition existing before selective demolition operations began.

3.13 SELECTIVE DEMOLITION SCHEDULE

A. Existing Construction to Be Removed: Remove existing construction where indicated. Remove existing construction as required to install the Work.
   1. Existing construction as indicated and as needed to complete the Work.
   2. Other construction where shown or noted on the Drawings and where specified in the Project Manual.

B. Existing Items to Be Removed and Reinstalled: Items and/or construction requiring temporary removal and/or disconnection, modification, etc. to remain a part of the Work.
   1. Existing construction as indicated and as needed to complete the Work.
   2. Other construction where shown or noted on the Drawings and where specified in the Project Manual

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Wood blocking, nailers, and wood framing.
2. Plywood
3. Fasteners.
4. Metal framing anchors.
5. Other, as indicated.

1.2 SUBMITTALS

A. Product Data: For each type of process and product.

B. Shop Drawings: Provide shop drawings for temporary protective canopy indicating material and stating OSHA compliance.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:
1. Power-driven fasteners.
2. Powder-actuated fasteners.
3. Metal framing anchors.

1.4 QUALITY ASSURANCE

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

B. Codes and standards: In addition to complying the pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Owner's Representative, comply with:
   1. "Product Use Manual" of the Western Wood Products Association for selection and use of products included in that manual.
   2. "Plywood Specification and Grade Guide" of the American Plywood Association.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver the materials to the job site and store, in a safe area out of the way of traffic, and stored off the ground surface.

B. Identify framing lumber as to grades. Sort and store each grade separately from other grades.

C. Use care in off-loading of lumber to prevent damage, splitting, and breaking of materials.

PART 2 - PRODUCTS

2.1 GRADE STAMPS

A. Identify framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau, or such other grade stamp as is approved in advance by the National Design Specification (N.D.S.).

B. Identify plywood as to species, grade, and glue type by the stamp of the American Plywood Association (A.P.A.).

C. Identify other materials of this Section by the appropriate stamp of the agency approved on advance by the N.D.S.

2.2 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. Provide dressed lumber, S4S, unless otherwise indicated.
   3. Minimum dimension for any individual piece shall be 24", unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.3 WOOD BLOCKING, NAILERS AND WOOD FRAMING

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including blocking, nailers, and wood framing.

B. For items of dimension lumber size, provide No. 2 grade or better lumber, douglas fir.

C. Minimum dimension for any individual piece shall be 24 inches, unless otherwise indicated.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including blocking and nailers.

B. For items of dimension lumber size, provide No. 2 grade lumber, douglas fir.

2.5 PLYWOOD

A. Plywood: DOC PS 1, Exposure 1, C-D Plugged.
   1. Thickness: 1-inch unless otherwise indicated.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
   1. Provide hot-dip galvanized fasteners except where stainless steel fasteners are indicated or as required to prevent dissimilar metal from coming in contact.
   2. Nails shall be ring-shank.

B. Power-Driven Fasteners: ICC-ES ESR-1539.

C. Fastener for installing Plywood to Concrete: Subject to compliance with requirements, provide X-CR (ICC ESR-1663) by Hilti or approved equal.
   1. Material: Hot-dipped galvanized.
   2. Washers: Hot-dipped galvanized, premounted.
   3. Diameter: 0.145 inch diameter.

D. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

2.7 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, provide metal framing anchors by Simpson Strong-Tie Co., Inc.

B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those existing.
   1. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Selection of lumber pieces:
   1. Carefully select the members.
   2. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing, and will allow making of proper connections.
   3. Cut out and discard defects that render a piece unable to serve its intended function.
   4. The Owner or Engineer may reject lumber, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

B. General:
   1. In addition to framing operations normal to the fabrication and erection indicated on the Drawings, install wood blocking and backing required for the work of other trades.
   2. Set horizontal; and sloped members with crown up.
   3. Do not notch, cut, or bore members for pipes, ducts, or conduits, or for other reasons except as shown on the Drawings or as specifically approved in advance by the Owner’s Representative.
   4. Pre-drill holes where indicated in the Contract Documents.

C. Bearings:
   1. Make bearings full unless otherwise indicated on the Drawings.
   2. Finish bearing surfaces on which structural members are to rest so as to give sure and even support.
   3. When framing members slope, cut or notch the ends as required giving uniform bearing surface.

D. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking and similar supports to comply with requirements for attaching other construction.

E. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

F. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

G. Do not splice structural members between supports unless otherwise indicated.

H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
   1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
   2. ICC-ES ESR-1539 for power-driven fasteners.

3.2 FASTENING

A. Nailing:
   1. Penetrate wood substrates 1-1/4 inch or 3/4 inch through, unless otherwise noted or required.
   2. Nail without splitting wood.
   3. Pre-bore as required or indicated on the Contract Drawings.
   4. Remove split members and replace with members complying with the specified requirements.

B. Wood Screws: Pre-drill as needed to prevent splitting wood.

C. Lag Screws: For lag screws, pre-bore holes same diameter as root of threads, enlarging holes to shank diameter for length of shank.

D. Bolts: Pre-drill holes prior to installing bolts.

3.3 CLEANING

A. Do not allow sawdust, dust, and debris to accumulate. Sweep surfaces clean on a daily basis.

B. Remove excess materials from job site and clean surfaces, including roof.

C. Survey site and building grounds for scattered fasteners and debris to prevent and damage.

END OF SECTION

SECTION 07 22 00

ROOF AND DECK INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Rigid insulation.
2. Tapered insulation.
3. Tapered edge strips
4. Substrate board.
5. Accessories.

1.2 RELATED REQUIREMENTS

A. Section 07 54 00 “Thermoplastic Membrane Roofing;” for roofing system, administrative and warranty requirements.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Submit manufacturer's shop drawings for tapered insulation latyout indicating insulation layout, cross section of assembly, and minimum board dimensions on 24”x36” drawings sheets.
1. Submit drawings indicating slope, ridges and valleys to achieve positive drainage at slopes indicated.
2. Comply with recommendations of National Roofing Contractors Association (NRCA) Roofing Manual, latest edition.

C. Samples for Verification: For the following products:
1. Rigid insulation board.
2. Substrate board.

D. Product test reports.

E. ASCE 07-10 insulation attachment pattern diagram, include roof perimeter and roof corner attachment.

1.4 DELIVERY, STORAGE AND HANDLING

A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.

C. Do not overload roof. Load goods so as not to cause structural damage or failure, or create a safety hazard.

D. All materials which are determined by the Owner, Engineer or the manufacturer to be damaged are to be removed from the job site and replaced at no cost to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Rigid Insulation: Polyisocyanurate insulation with inorganic coated-glass facers, including flatstock, tapered, and tapered edge strips; ASTM C 1289, with a core density of 2.0 pcf, per ASTM D 1622.
   1. Subject to compliance with requirements, provide products by one of the following:
      a. Sarnafil Inc.
      b. Atlas Roofing Corporation
      c. Approved Equal
   2. ASTM C 1289, Type II
   3. ASTM E 108 or UL 790, Class A System
   4. ASTM E 84 or UL 237, Class 1 Rating
   5. ASTM D 1621, Compressive Strength 20 PSI
   6. Thickness: 1-1/2 inches unless otherwise indicated.
   7. Panel Size: Insulation panel shall be 4’-0” x 4’-0” maximum.
   8. Tapered: 1/2-inch per foot slope unless otherwise indicated.
      a. Location: Raised roof of building 1 **and valleys at buildings 1, 14, and 16**.
   9. Tapered edge strip at drains shall slope vertically from 0 to 1-1/2 inch in 12 inches horizontal.
   10. Adhered for **concrete** deck attachment **and mechanically attached for metal deck attachment**, in accordance with manufacturer’s recommendations.
   11. Approved by roofing membrane manufacturer for specified warranty.

B. Substrate Board: Glass mat gypsum panel with pre-primed surfaces on front and back; ASTM C 1177, with maximum flame-spread and smoke-developed indexes of 0, per ASTM E 84.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Georgia Pacific; DensDeck Prime
      b. Approved Equal
   2. Thickness: 1/2”
   3. Width: 4’-0”
   4. Length: 8’-0”
   5. Surfacing: Fiberglass mat with non-asphaltic coating
   6. Flexural strength: 80 lbs. min., ASTM C 473
   7. Permeance: 35 perms, ASTM E 96
   8. R Value: 0.56, ASTM C 518
   9. Water Absorption: 10% maximum, ASTM C 1177
   10. Compression Strength: 500-900 PSI
   11. FM Class 1, FM 4450
   12. UL Class A, UL 790
   13. Adhered for horizontal attachment and mechanically attached to vertical substrates, in accordance with manufacturer’s recommendations.
   14. Approved by roofing membrane manufacturer for specified warranty.

2.2 ACCESSORIES

A. Foam Adhesive for Concrete Deck: Manufacturer's standard foam adhesive for bonding rigid insulation board to the roof deck and to other insulation and substrate board to insulation.
   1. Subject to compliance with requirements, provide products by one of the following:
      a. Sarnacol 2163; Sika-Sarnafil
      b. Sarnacol AD Board Adhesive; Sika-Sarnafil
      c. FTR 601; FiberTite
      d. Approved equal.
   2. Provide foam adhesive accepted by roofing manufacturer for specified warranty.

B. Fasteners for Metal Deck: Fasteners to secure substrate boards shall be approved substrate board fasteners as recommended and approved by the substrate board manufacturer. Fasteners shall be corrosion resistance coated with 3-inch, 26 gauge galvalume coated plates. Length of fasteners shall be sized to provide no less than 1-1/2 inch embedment or 3/4 inch penetration beyond deck.

PART 3 - EXECUTION

3.1 CONDITION OF SURFACES

A. Inspection of Surfaces: Substrate on which insulation and substrate board is to be installed shall be clean, smooth and dry. Condition of substrate shall be inspected and approved by the Contractor, Engineer, and the Owner's Representative immediately before start of installation.

B. Preparation of Surfaces: Check roof deck surfaces for defects before work is started; correct defects and inaccuracies in roof deck surface to eliminate poor drainage, hollow and low spots.
   1. Deck surfaces varying more than 1/4 inch and defects will be repaired by Contractor.

C. Correct defects in existing decks where required by the Engineer.

3.2 PROTECTION OF MATERIALS

A. Keep roof insulating materials and substrate board dry before, during, and after installation. Apply two layers of tarp over rigid insulation and substrate board on a daily and nightly basis.

3.3 INSTALLATION, GENERAL

A. Comply with manufacturers' written instructions applicable to products and applications indicated.

B. Install insulation and substrate board that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation and substrate board to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with same material. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation and substrate board to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

E. Install accessories in accordance with manufacturers' instructions.

F. Install only as much substrate and insulation board as can be covered with roofing by the end of the workday and prior to inclement weather.

3.4 INSTALLATION OF INSULATION AND SUBSTRATE BOARD

A. Layout of Insulation/Substrate Board: Install insulation and substrate board over the properly prepared decking.
   1. Multiple-Layer Installation: Board thickness greater than 2 inches shall be installed in multiple layers and shall be 2 inches maximum per layer.
   2. Boards to be loosely laid with all joints staggered twelve inches minimum from adjacent rows and from joints of board layer below.
   3. Closely cut each board to tightly fit around all roof penetrations.
   4. No boards shall be cut to less than 1 square foot in size.
   5. Fit each board snugly against adjacent boards so that no gap larger than 1/8 inch exists.
   6. Carefully inspect the installation to ensure that each board fits flush with adjacent boards.
   7. Boards with broken corners or that display cupping or warping shall not be used.

B. Adhere insulation to properly prepared concrete deck.

C. Adhere substrate board to insulation board. Mechanically attach substrate board at vertical applications.

D. Crickets: Install crickets at the high side of all curbs or other obstacles twenty four inches or wider blocking positive drainage to roof drains or scuppers, and at locations indicated.
   1. Carefully layout each cricket to ensure positive roof drainage and no possibility of roof ponding.
   2. Crickets shall smoothly transition between changes in slope. Provide tapered edge strips to avoid voids at toe of crickets.

E. **Tapered Insulation: Install tapered insulation at raised roof of CSM Building 1 and at all valleys of CSM Buildings 1, 14, and 16.**
   1. Carefully layout each taper system to ensure positive roof drainage and no possibility of roof ponding.
   2. Taper system shall smoothly transition between changes in slope. Provide tapered edge strips to avoid voids at toe of taper system.

F. Foam Adhesive Attachment of Rigid Insulation and Substrate Board at Horizontal Applications: Using a ribbon pattern space 1/2 inch wide beads of foam at 8 inches on center. If fastening pattern set by manufacturer or necessary to meet ASCE 07-10 wind uplift requirements exceeds those of this section, the more stringent fastening requirements are to be followed. Fastening pattern to be increased in corners and perimeters per the requirements of ASCE 07-10. As adhesive is applied, immediately place board into wet adhesive. Do not allow adhesive to skin over. Eliminate un-even surfaces to ensure positive contact between the board and substrate. Foam cannot be applied to a wet substrate.

G. Mechanical Attachment of Rigid Insulation and Substrate Board at Horizontal Metal Deck Applications: Fasten through substrate board with non-corrosive screws and plates, minimum spacing to be one fastener per every four square feet. If fastening pattern set by manufacturer or necessary to meet ASCE 07-10 wind uplift requirements exceeds those of this section, the more stringent fastening requirements are to be followed. Fastening pattern to be increased in corners and perimeters per the requirements of ASCE 07-10.

1. Take necessary precautions to ensure that fasteners do not penetrate conduit or miscellaneous piping below the existing decking.

H. Mechanical Attachment of Substrate Board at Vertical Applications: Fasten through substrate board with non-corrosive screws, minimum spacing to be 8 inches on center vertically with vertical rows spaced 16 inches apart. Minimum fastener spacing of 12 inches on center at top and bottom.

3.5 PROTECTION OF APPLIED INSULATION AND SUBSTRATE BOARD

A. Completely cover applied insulation and substrate board with finished roofing system. Protect open spaces between insulation and substrate board and walls and spaces at curbs, until permanent roofing and flashing is applied. Insulation and substrate board may not be left uncovered overnight.

B. In finished areas, storing walking, wheeling or trucking will not be permitted. Provide smooth, clean board or plank walkways, runways, and platforms near supports, as necessary to distribute weight to conform to indicated live load limits or roof construction.

END OF SECTION

SECTION 07 31 13

ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Asphalt shingles.
   2. Nailable Insulation
   3. Underlayment and High Temperature Self-Adhered Flashing.

1.2 RELATED SECTIONS

A. Section 07 62 00 – Sheet Metal Flashing and Trim; for sheet metal incorporated into the work of this Section.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each exposed product and for each color and blend specified.

C. Product test reports.

D. Research/evaluation reports.

E. Maintenance data.

F. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

A. Fire-Resistance Characteristics: Where indicated, provide asphalt shingles and related roofing materials identical to those of assemblies tested for fire resistance per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
   1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

B. Preinstallation Conference: ~~Conduct conference at Project site~~: **One week prior to starting the application of the roofing system and insulation, coordinate pre-roofing conference with the District, Construction Manager, Architect, Roofing Consultant, manufacturer's representative, General Contractor, Roofing Contractor, and other installers whose work interfaces with or affects roofing, including installers or roof accessories and roof-mounted equipment. Meeting goals are:**

1. A clear understanding of Contract Documents.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing during and after installation.
9. Review roof observation and repair procedures after roofing installation.

C. The Contractor shall attend the conference with personnel directly responsible for the installation of roofing and insulation, flashing and sheet metal work, plumbing, and the roofing materials manufacturer. Conflicts shall be resolved and confirmed in writing.

D. Provide all shop drawings, manufacturers' literature and submittals for approval a minimum of seven (7) days prior to pre-installation conference.

1.5 WARRANTY

A. Special Warranty: Standard transferable form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.
   1. Material Warranty Period: Lifetime from date of Substantial Completion, prorated, with first 10 years non-prorated.
   2. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing. ASTM D3161, Class F, 110 mph wind resistance. ASTM D3018 Type 1.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Presidential Shake Shingles; Certainteed or comparable product by one of the following:
      a. Atlas Roofing Corporation.
      b. Elk Premium Building Products, Inc.; an ElkCorp company.
   2. Algae Resistance: Granules treated to resist algae discoloration.

3. Color and Blends: As selected by Owner from manufacturer's full range including custom colors and blends.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.2 NAILABLE INSULATION

A. Nailable Insulation: Nailboard; Johns Manville
1. Nailable Surface: CDX Plywood.
2. Thickness: 2 inches.

2.3 UNDERLAYMENT AND HIGH TEMPERATURE SELF-ADHERING FLASHING

A. Roof Felt Underlayment: ASTM D 226, Type II.

B. High temperature self-adhering flashing, polyethylene faced: ASTM D 1970, min. of 30 mils thick; slip-resisting, polyethylene-film-reinforced top surface laminated to butyl rubber adhesive, with release-paper backing; cold applied.
1. Products: Grace Ultra; W.R. Grace Construction Products or approved equal.
2. Location: Eaves, and where indicated.

C. Primer: Manufacturer’s recommended primer for improved adhesion to substrates.

2.4 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; stainless-steel or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, ring shank, sharp-pointed, with a minimum 3/8-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.
1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Underlayment Nails: Stainless-steel, or hot-dip galvanized-steel wire, ring shank, with low-profile capped heads or disc caps, 1-inch minimum diameter.

D. Factory Coated Stone Finish: G90 Galvanized sheet metal stone coating.
1. Provide Defender Series by California Stone Coatings.
2. Location: Plumbing and vent flashings.

PART 3 - EXECUTION

3.1 NAILABLE INSULATION

A. Install nailable insulation in accordance with manufacturer’s written instructions.

B. Mechanically attach nailable insulation in accordance with building code and manufacturer's instructions.
   1. Install nailboard with wood side up.
   2. Ensure that foam edges contact each other.
   3. Stagger seams.

3.2 UNDERLAYMENT INSTALLATION

A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

B. Double-Layer Underlayment: Parallel with and starting at the eaves, install a 19-inch- wide starter course at eaves and completely cover with full-width second course. Install succeeding courses lapping previous courses 19 inches in shingle fashion. Lap ends a minimum of 6 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with underlayment nails.
   1. Terminate felt underlayment as indicated in the Drawings and as required by the manufacturer.
   2. Install fasteners at no more than 36 inch on center.

3.3 ASPHALT SHINGLE INSTALLATION

A. General: Install asphalt shingles according to manufacturer's written instructions for specific shingle and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual." Where there is a discrepancy, more stringent applies.

B. Install starter course layer along lowest roof edge, consisting of two overlapping layers of starter shingles.

C. Install first and remaining courses of asphalt shingles across roof deck with manufacturer's recommended 5-inch and 15-inch diagonal offset pattern.

D. Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.

END OF SECTION

SECTION 07 51 13

BUILT-UP ASPHALT ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish and install built-up asphalt roofing system roof insulation, paper insulation and cover board where shown on the drawings, as specified herein, and as needed for a complete and proper installation.
   1. Roofing system installation shall provide leak-free, pond-free roofing.
   2. Furnish and install embedded lead and sheet metal flashings.

B. Related Requirements:
   1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Section 07 62 00 “Sheet Metal Flashing and Trim” for metal roof flashings and counterflashings.

1.2 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to Work of this Section.

1.3 SYSTEM PERFORMANCE

A. Wind Uplift Performance: Provide assembly meeting wind uplift resistance for field, perimeter and corners in accordance with California Building Code.

B. Roofing System Design: Tested by a qualified testing agency to resist pressures calculated in accordance with ASCE 07; current edition.

C. Fire Resistance: UL Class A.

1.4 PREINSTALLATION MEETINGS

A. Pre-installation Roofing Conference: One week prior to starting the application of the roofing system and insulation, coordinate pre-roofing conference with the District, Construction Manager, Engineer, manufacturer’s representative, General Contractor, Roofing Contractor, and other installers whose work interfaces with or affects roofing, including installers or roof accessories and roof-mounted equipment. Meeting goals are:
   1. A clear understanding of Contract Documents.
   2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
   3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. The Contractor shall attend the conference with personnel directly responsible for the installation of roofing and insulation, flashing and sheet metal work, plumbing, and the roofing materials manufacturer. Conflicts shall be resolved and confirmed in writing.

C. Provide all shop drawings, manufacturers' literature and submittals for approval a minimum of seven (7) days prior to pre-installation conference.

1.5 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For built-up roofing. Include plans, elevations, sections, details, and attachments to other work, including:
1. Base flashings and built-up terminations.
2. Tapered insulation, including slopes, ridges and valleys to achieve positive drainage at slopes indicated; and R-Value expressed as minimum and average per roof area.
3. Crickets, saddles, and tapered edge strips, including slopes.
4. Comply with recommendations of National Roofing Contractors Association (NRCA) Roofing Manual, latest edition.

C. Samples for Verification:
1. Each roll product proposed for use – 6" square sample.
2. Sealants – 1 tube.
3. Rigid insulation board – Manufacturer sample.
4. Cover board.
5. Cap sheet, of color required.
6. Ply sheet.
7. Base sheet.
8. Base flashing backer sheet.
9. Walkway pads or rolls, of color required.
10. Rigid insulation board, flat stock and taper
11. Cover board
12. Fasteners, all types.

D. Qualification Data: For Installer and manufacturer.

E. Manufacturer Certificates: Signed by roofing manufacturer certifying that built-up roofing complies with requirements specified in "System Performance " Article and indicating approved fastening to achieve compliance.
1. Submit evidence of compliance with performance requirements.

F. Research/Evaluation Reports: For components of built-up roofing, from ICC-ES.

G. Sample Warranties: For manufacturer's special warranties.

H. Maintenance Data: For built-up roofing to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for built-up roofing identical to that used for this Project.

B. Installer Qualifications: A qualified firm specializing in applying bituminous roofing with a minimum of five (5) years documented successful experience, that is approved, authorized, or licensed by built-up roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

C. Work of this Section to conform to NRCA Roofing and Waterproofing Manual, roofing manufacturer’s written instructions, and this specification. The more stringent requirement(s) will take precedence where any requirements between instructions differ.

D. Materials: For each type of material required for the Work of this Section, provide materials which are the products of one manufacturer. For products indicated that are not manufactured by the roofing manufacturer, provide products approved by the roofing manufacturer.

1.7 REGULATORY REQUIREMENTS

A. Conform to Uniform Building Code for roof assembly and fire hazard requirements.

B. Conform to applicable City, County, State, and Federal requirements.

C. Conform to the requirements of the following regulatory agencies:
1. Bay Area Air Quality Management District
2. OSHA
3. EPA
4. Local City and County Authorities

D. The Contractor shall be responsible for obtaining all necessary permits for installation of new roofing. Coordinate the required government inspections with the local authorities.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver the materials to the job site in the manufacturer’s unopened containers with all labels intact and legible at time of use.

B. Store and handle materials in accordance with the manufacturer’s published requirements, Contract Documents and in accordance with the Owners requirements. The more stringent requirements shall apply.

C. Maintain the products in a dry condition during delivery, storage, handling, installation, and concealment.

D. Protect from damage from sunlight, weather, excessive temperatures and construction operations.

E. Remove damaged material from the site and dispose of in accordance with applicable regulations.

F. Sequence deliveries to avoid delays, but minimize on-site storage.

G. Store products in weather protected environment, clear of ground and moisture. Cover rolled goods and insulation with breathable type covering such as tarpaulin. Visqueen or other non-breathable plastic wraps are not acceptable.

H. Stand roll materials on end.

I. Do not overload roof. Load goods so as not to cause structural damage or failure, or create a safety hazard.

1.9 PROJECT REQUIREMENTS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive waterproofing.

C. Do not apply roofing membrane to damp surfaces.

1.10 WARRANTY

A. Manufacturer Warranty: Submit a written warranty, without monetary limitation, signed by roofing system manufacturer agreeing to promptly repair leaks in the roof membrane and base flashings resulting from defects in materials or workmanship for the following warranty period.
   1. Warranty Period: 20 years from the date of Completion.
   2. The Manufacturer shall make periodic site visits during Construction as required to ensure the issuance of the specified warranty. Contractor shall coordinate Site Visits.

B. Installer Warranty: Provide five (5) year contractor warranty starting from the date of final acceptance of all roofs by District. Provisions of the warranty must cover defects in workmanship and materials; and all corrective actions necessary to repair damage to the roof membrane and materials caused by roof leaks, or improper application.
   1. Must cover damage to building and contents resulting from failure to resist penetration of water during construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design Manufacturer: Johns-Manville
   1. Products listed below are products of the basis of design manufacturer.
   2. Materials provided by other acceptable manufacturers listed shall match type and performance of the basis of design products, including warranty requirements.

B. Other acceptable manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
   1. GAF
   2. Malarkey Roofing Products

C. Source Limitations: Obtain components including roof insulation fasteners for built-up roofing from same manufacturer as built-up roofing or manufacturer approved by built-up roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed built-up roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Built-up roofing and base flashings shall remain watertight.
   1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
   2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by built-up roofing manufacturer based on testing and field experience.

C. Roofing System Design Fastening Pattern:
   1. **Corner: For full sheet, fasteners at laps and three rows of fasteners with rows equally spaced.**
      a. Fastener spacing at laps: 5-1/2 inches on center.
      b. Fastener spacing between laps: 5-1/2 inches on center.
   2. **Perimeter: For full sheet, fasteners at laps and two rows of fasteners with rows equally spaced between laps.**
      a. Fastener spacing at laps: 5 inches on center.
      b. Fastener spacing between laps: 7 inches on center.
   3. **Field-of-Roof: For full sheet, fasteners at laps and two rows of fasteners between laps.**
      a. Fastener spacing at laps: 9 inches on center.
      b. Fastener spacing between laps: 12 inches on center.

D. Solar Reflectance Index (SRI): Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

E. Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.

F. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

G. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 ROOFING MEMBRANE SHEET MATERIALS

A. Sheathing Paper: Red-rosin type, minimum 3 lb./100 sq. ft.

B. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
   1. PermaPly 28; Johns-Manville

C. Ply Sheet: ASTM D 2178, Type VI, asphalt-impregnated, glass-fiber felt.
   1. GlasPly Premier; Johns-Manville

D. Cap Sheet: ASTM D 3909, Title 24 compliant, asphalt-impregnated and -coated, glass-fiber cap sheet, with white acrylic-coated, coarse mineral-granule top surfacing and fine mineral surfacing on bottom surface.
   1. GlasKap CR; Johns-Manville

2.4 BASE FLASHING SHEET MATERIALS – BASIS OF DESIGN

A. Base Ply Sheet (over wood substrates): ASTM D 4601, Type II, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
   1. PermaPly 28; Johns-Manville

B. Backer Sheet: Polyester/Fiber Glass-Reinforced, Asphalt-Coated Flashing Sheet.
   1. GlasTite Flexible; Johns-Manville

C. Flashing Surfacing Sheet: ASTM D 3909, asphalt-impregnated and -coated, glass-fiber cap sheet, with white acrylic-coated, coarse mineral-granule top surfacing and fine mineral surfacing on bottom surface.
   1. GlasKap CR; Johns-Manville

D. Basis of Design: Base flashing backer sheet and flashing surfacing sheet shall be installed in hot asphalt.
   1. PermaMop; Trumbull Asphalt

2.5 BASE FLASHING SHEET MATERIALS – OTHER MANUFACTURERS

A. Base Ply Sheet (over wood substrates): ASTM D 4601, Type II, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
   1. GAFGLASS #75; GAF
   2. 515 Base; Malarkey Roofing Products

B. Backer Sheet: Fiber Glass-Reinforced, SBS Modified Flashing Sheet, ASTM D6163, Type I, Grade S.
   1. Ruberoid 20; GAF
   2. 603 Modified Superbase; Malarkey Roofing Products

C. Flashing Surfacing Sheet: ASTM D 6163, Type I, Grade G, SBS coated fiber glass-reinforced cap sheet, with white acrylic-coated, coarse mineral-granule top surfacing and fine mineral surfacing on bottom surface.
   1. Ruberoid EnergyCap SBS 30FR; GAF
   2. 624 RCAP; Malarkey Roofing Products

D. Other Manufacturers: Base flashing backer sheet and flashing surfacing sheet shall be installed with Manufacturer's approved cold-applied adhesive.

2.6 ASPHALT MATERIALS

A. Asphalt Primer: ASTM D 41.

B. Roofing Asphalt D-312 (except solubility):
1. PermaMop; Trumbull Asphalt
2. No known equal, no substitutions

C. Asphalt shall meet the following criteria:

Property	ASTM	Minimum Requirement
Weatherability	D-529	Min. 175 weathering cycles
Softening Point	D-36	215-235 (F)
Flash Point	D-92	525 (F)
Penetration Units	D5	32F 7-12
		77F 18-30
Ductility @	D-113	77F cm 7.0

EVT

125 centiposie (hand mop)	375 (F)
75 centiposie (machine spread)	395 (F)

2.7 AUXILIARY BUILT-UP ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with built-up roofing.
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.8 Cold-Applied Adhesive: Roofing manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with built-up base flashings.

2.9 PLASTIC CEMENT

A. Bestile Industrial Roof Cement from Johns-Manville

B. ASTM D4586 Type II

2.10 MODIFED FLASHING CEMENT

A. MBR Utility Cement from Johns-Manville

B. ASTM – None

2.11 TWO-PART MODIFIED FLASHING CEMENT

A. MBR Flashing Cement from Johns-Manville

B. ASTM – None

2.12 COATING

A. Manufacturer’s approved coating for installation over exposed roof cement for the specified warranty.

2.13 CERAMIC GRANULES

A. #11 ceramic granules by 3M.

B. Color to be selected by Owner.

2.14 FASTENERS

A. Manufacturer: Fasteners shall be by Maze Nails
1. Or approved equal.

B. Fasteners shall be approved by roofing manufacturer.

C. Base ply fasteners shall be industry-standard hot dipped galvanized annular ring-shanked 1 inch cap nails. Length shall be at a minimum enough for 1-1/4 inch embedment into substrate or 3/4 inch penetration beyond underside of substrate.

D. Fasteners for Nailing Metal Flanges into Wood: Hot dipped galvanized annular ring-shanked nails with 3/8 inch head. Length shall be at a minimum enough for 1-1/4 inch embedment into substrate or 3/4 inch penetration beyond underside of substrate.

E. Fasteners for Nailing Base Flashing into Wood: Industry-standard hot dipped galvanized annular ring-shanked 1 inch cap nails. Length shall be at a minimum enough for 1-1/4 inch embedment into substrate or 3/4 inch penetration beyond underside of substrate.

F. Base Flashing into Concrete: Hot dipped galvanized concrete nails through tin caps.

2.15 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, glass-fiber reinforced facer on both major surfaces.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Johns Manville
      b. GAF
      c. Atlas Roofing Corporation
   2. Board Size: 4’-0”x4’-0”
   3. Thickness: 1-1/2 inches.

C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.16 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with built-up roofing.

B. Insulation Cant Strips: ASTM C 728, perlite insulation board.
   1. FesCant Plus; Johns-Manville

C. Tapered Edge Strips: ASTM C 728, perlite insulation board.

2.17 COVER BOARDS

A. Cover Board: ASTM C 728, perlite board, 1-inch thick, seal coated.
   1. Fesco Board; Johns-Manville

2.18 WALKWAYS

A. Walkway Pads: Mineral-granule-surfaced, reinforced asphaltic composition, slip-resisting pads, manufactured as a traffic pad for foot traffic and acceptable to roofing manufacturer, 3/4 inch thick, minimum.
   1. AP-5140; APOC, or approved equal
      a. Pad Size: 3’-0”x4’-0”
      b. Comply with ASTM D517 and E108

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Verify that substrate is free of depressions, waves, or projections and is properly sloped to drain. Bring any unacceptable conditions to the attention of the District and Engineer.

C. Beginning of installation means installer accepts existing substrate.

3.2 PREPARATION OF SUBSTRATES

A. Refer to manufacturer's literature for requirements for preparation of substrates. Remove debris. Use repair materials and methods which are acceptable to roofing manufacturer.

3.3 PROTECTION

A. Protect building surfaces against damage from roofing work.

B. Protect grounds and landscaping against damage from roofing work.

C. Prevent debris and dust from spreading due to windy conditions.

D. Clean up debris on a daily basis. Keep grounds and landscaping clean at all times.

E. The contractor shall be responsible for all damages to interior finishes, equipment and property during construction due to failure to install proper dust, debris and moisture protection.

F. Furnish and install preliminary roofing as temporary weather protection, at Owner's option, when and where directed by the Owner.

3.4 INSTALLATION

A. Comply with Contract Documents and manufacturer's written instructions and recommendations.

B. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the Work of this Section.

C. Install roofing where shown on the Drawings, and in strict accordance with the manufacturer's recommendations as approved by the Engineer and District.

D. Install roofing assembly to comply with requirements of the Contract Documents including, but not limited to, wind uplift requirements.

3.5 SHEATHING PAPER AND BASE SHEET INSTALLATION

A. Install sheathing paper and base sheet over properly cleaned and prepared substrate.

B. Install single layer of sheathing paper. Provide 2 inch side laps and end laps. Tack down to temporarily secure prior to base sheet installation.

C. Base sheet shall be unrolled and allowed to fully relax before fastening.

D. Install relaxed base sheet over sheathing paper starting at lowest point of roof. Start with an 18 inch width sheet. The following base sheet courses are to be applied full width, lapping each preceding felt 2 inch on the side laps and 4 inch on the end laps. Nailing pattern and spacing to be sufficient to achieve the wind up lift resistance for the roofing system indicated in the performance requirements article of this section. Comply with manufacturer's requirements if more stringent.

E. Cut sheathing paper and base sheet tight to penetrations and vertical projections. Gaps greater than 1/8 inch will require remediation.

F. Deficiencies such as wrinkles or ridges in the base sheet shall be cut out and re-nailed to provide as smooth a surface as possible. Misalignment or inadequate lapping will require removal and reinstallation.

3.6 INSULATION INSTALLATION

A. Coordinate installation of roof system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer's written instructions for installation of roof insulation.

C. Provide wood nailers matching the thickness of the insulation boards to secure sheet metal flashing flanges.

D. Install one or more layers of insulation under area of roofing to achieve required thickness in hot asphalt. Where overall thickness is 2 inches or greater, install 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 12 inches in each direction.
   1. Install subsequent layers in hot asphalt.

E. Install tapered insulation under area of roofing to conform to slopes indicated.

F. Install insulation boards with long joints in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards.
   1. No insulation board shall be cut to less than 1square foot in size.
   2. Stagger insulation joints minimum 12 inches in each direction between insulation.
   3. Closely cut each board to tightly fit around all roof penetration blocking.
   4. Fit each insulation board snugly against adjacent boards so that no gap larger than 1/4 inch exists. Fill gaps exceeding 1/4 inch with like material.
   5. Carefully inspect the installation to ensure that each board fits flush with adjacent insulation boards.
   6. Insulation boards with broken corners or that display cupping or warping shall not be used.
   7. Replace boards that are not completely embedded in hot asphalt.
   8. Hot Mopped Insulation: Step in insulation board to ensure complete adhesion to the underlying asphalt and insulation.

G. Trim surface of insulation boards where necessary at roof drains so completed surface is flush and does not restrict flow of water.

H. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

I. Proceed with installation only after unsatisfactory conditions have been corrected.

3.7 INSULATION CRICKETS

A. Install crickets at the high side of all curbs or other obstacles twenty four inches or wider blocking positive drainage to roof drains or scuppers, in locations indicated on the roof plans, or as necessary to prevent ponding water between drains, at a parapet wall or behind mechanical equipment.

B. Layout each cricket to ensure positive roof drainage and no possibility of roof ponding.

C. Crickets shall smoothly transition between changes in slope.

D. Crickets must smoothly transition into roof area. Provide tapered edge strips to avoid voids at toe of crickets.

3.8 COVER BOARD INSTALLATION

A. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer's written instructions for installing roof cover board.

C. Install cover board in full mopping of hot asphalt. Equiviscous Temperature (345F-395F) at point of application; No more or less than 20F from bitumen rating indicated on bitumen container label.

D. Install cover board with long joints in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards.
   1. No cover board shall be cut to less than 1square foot in size.
   2. Stagger joints minimum 12 inches in each direction between cover boards.
   3. Closely cut each board to tightly fit around all roof penetration blocking.
   4. Fit each board snugly against adjacent boards so that no gap larger than 1/4 inch exists. Fill gaps exceeding 1/4 inch with like material.
   5. Carefully inspect the installation to ensure that each board fits flush with adjacent boards.
   6. Boards with broken corners or that display cupping or warping shall not be used.
   7. Replace boards that are not completely secured.
   8. Step in cover board to ensure complete adhesion to the underlying asphalt and insulation.
   9. Spud and remove any excess asphalt which has oozed on the surface of the insulation, at the joints.
   10. Asphalt shall be applied at the rate of 30 lbs. per square.

E. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.
   1. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

F. Install cover board to substrate in a solid mopping of hot roofing asphalt according to roofing system manufacturer’s instruction.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.9 MEMBRANE APPLICATION

A. Equiviscous Temperature (345F-395F) at point of application; No more or less than 20F from bitumen rating indicated on bitumen container label.

B. Where mopping must be done up to an open eave or roof opening, contractor shall take steps to prevent asphalt over run.

C. Install an extra full width ply in all waterways directly over cover board insulation prior to field plies.

D. Ply Felts: Apply three plies of felts in a continuous operation in shingle fashion over the cover board with hot-moppings of bitumen as specified herein. Provide starter sheets of felt to maintain the specified number of plies of felt throughout the roofing. Provide end laps of not less than 5 inches and staggered a minimum of 36 inches. Apply felts at right angles to the roof slope so that the direction of flow of water is over and not against the laps. Extend felts to the top of cant strip. Trim felts to a neat fit around vent pipes, and other projections through the roof. All plies must be broomed.

E. Hot Moppings of Plying Felts: Apply the felt immediately following the application of the hot asphalt. Working ahead with the asphalt is not permitted. Do not mop more than 6' in front of the roll. When the felts come in contact with asphalt the asphalt shall be completely fluid with mop temperatures within the specified EVT range. After embedding felts in hot asphalt, immediately broom or squeegee felts to eliminate all trapped air and voids. Roofing membrane shall be free of all voids, wrinkles, buckles, kinks, and fishmouths. Cut deficiencies and repair with full number of plies affected. If setting rolls by hand, back roll and re-mop each time roll is stopped to eliminate displacement void lines.

F. At slopes over 2:12 all sheets are to be strapped. Back nailing is to be in accordance with manufacturer's recommendations.

G. Asphalt Mopping: Apply nominal 30 lb. of asphalt per 100 square feet of ply – no more or less than 25 – 40 lb. per square. Note: this requirement supersedes manufacturer's acceptable requirements. On slopes exceeding ½" x 12", apply nominal 22 lbs. asphalt, no more than 28 lbs. per square.

H. Install two plies membrane and bitumen glaze coat for cut-off at end of each day's operation. Remove cut-off before resuming roofing.

3.10 CAP SHEET SURFACING

A. Cut cap sheet into maximum 12 foot lengths and allow to relax and flatten for one half hour.

B. Position the sheet upside down on top of previously installed sheet, leaving previous selvedge exposed.

C. When mopping area to receive cap sheet, mop approximately 2 inches onto backside of piece being installed.

D. Flop into place, and walk-in seam; dress-up overruns with loose granules, embedded immediately.

E. If flopped cap sheet is not adhering to mopping either:
   1. Cut cap sheet into shorter lengths or
   2. Use two mops, to hasten embedment into the mopping.

3.11 FLASHING AND ACCESSORIES

A. Flashing: Provide built-up bituminous flashing in the angles formed where the roof deck abuts walls, curbs, pipes and other vertical surfaces and where necessary to make the work weathertight. Install flashing after plies of felt have been applied. Metal flashing collars, cap flashings and saddles are specified under Division 7 Section "Sheet Metal Flashing and Trim". Prime all metal flanges prior to installation.

B. Base Flashing: Install one layer of base sheet scatter nailed 8 inches on center, both directions, up vertical surface to heights shown on details. Terminate this layer at toe of cant. Install two layers of base flashing backer sheet, staggered out 2 and 4 inches past toe of cant respectively. Set into full mopping of hot asphalt. Install base flashing surface sheet in full mopping of hot asphalt, extend 2 inches past second reinforcing ply. Nail top of base flashing 6 inches on center. Base flashings shall be 24 inch max height. Three-course the top of base flashings with modified flashing cement and fiberglass fabric at the end of each day.

C. Three-course vertical laps, inside and outside corners of completed base flashings with 2-part modified flashing cement. Surface three-coat with a manufacturer-approved UV-stable coating.

D. Embedded Metal Flashing: Prime surface of metal to receive stripping plies. Allow primer to dry before proceeding. Set flanges of sheet metal (or lead) to be incorporated into the roofing system in a full, uniform bed of plastic roof cement not less than ¼" inch thick over finished membrane plies. Nail sheet metal flanges 3" on center staggered to wood blocking substrates. Lead flashing does not require nailing. Apply two stripping plies over metal flange with hot asphalt. Extend felts 4 and 8 inches respectively, beyond the edges of the flanges and onto the roofing membrane. Sheet metal gravel stop requires three stripping plies, 9", 12" and 18" widths.

3.12 WALL FLASHINGS ABOVE 2 FEET HEIGHT

A. If walls are taller than 24 inches, an independent wall covering system shall be installed. Wall covering shall consist of one base sheet, one reinforcing ply and one cap sheet ply. Lap wall covering system 4 inches over base flashing.

3.13 WALK PADS

A. Install specified walk pads directly over cap sheet in 5 spots of plastic cement.

B. Apply ceramic granules to surface area contaminated with asphalt during installation to achieve a uniform surface texture.

C. Walk pads shall be installed around all HVAC units and other motorized rooftop equipment, where shown on the Drawings, and at minimum three sides at each hatch and other roof access locations.

D. Walk pads installed under pipe support blocks are to be installed loose over cap sheet surface. Walk pad is to extend 6" beyond the block in each direction.

3.14 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed by a roofing observer hired by the District.

B. Correct defect or irregularities as identified by the Engineer, District or field observer.

C. Roof test cuts containing voids (air pockets) in membrane greater than 1.5 inches in length, or overlaying voids, are unacceptable.

D. Holidays (lack of asphalt) visible to the naked eye will be considered unacceptable.

E. Interply asphalt less than 25 lbs. or greater than 40 lb. per 100 square feet is unacceptable.

F. The District reserves the right to obtain test cuts to determine conformance to specifications standards. The contractor is responsible for immediately patching the test cuts with 3 plies of Premier Ply in hot asphalt.

G. If any test fails to the criterion described above, additional test cuts will be obtained to determine the extent of the problem area. A minimum area of 20’ x 20’ centered over the deficient test cut will be repaired by mopping two additional plies with hot asphalt over it.

3.15 CLEANING

A. Remove bituminous markings from finished surfaces. Paint sections of wall stained with asphalt, after asphalt dripping have been removed.

B. In areas where finished surfaces are soiled by asphalt or any other source of soiling caused by Work of this Section consult manufacturer of surfaces for cleaning advice and conform to their documented instructions

C. Repair or replace defaced or disfigured finished caused by work of this Section.

3.16 PROTECTION

A. Protect completed roofing from subsequent construction activities as recommended by manufacturer.

B. Where traffic must continue over finished roof installation, protect surfaces with plywood or walk pads.

END OF SECTION

SECTION 07 54 00

THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes furnishing and installation of the following:
   1. Adhered felt-backed thermoplastic membrane roofing system.
   2. ~~Mechanically attached thermoplastic membrane roofing system for use at metal roofs.~~
   3. Completed roof system shall include all insulation, flashings, accessories, terminations, and other construction necessary to provide a leak-free, ponding-free roofing system.

B. Fastener pull-out resistance tests performed by the manufacturer's technical representative. Testing shall be performed on walls and in the field of the roof.

1.2 RELATED REQUIREMENTS

A. Section 07 22 00 "Roof and Deck Insulation;" for insulation and substrate board.

B. Section 07 62 00 "Flashing and Sheet Metal;" for additional requirements, including shop drawing requirements, for membrane-clad metal.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: At least seven (7) working days prior to starting the application of the roofing system and insulation, conduct and coordinate a preinstallation meeting with Owner, Engineer, Contractor including personnel directly responsible for the installation, manufacturer's representative, and Contractors whose work interfaces with or affects the Work of this Section including Contractors of roof accessories.
   1. Provide all Submittals and shop drawings for approval a minimum of (7) days prior to preinstallation meeting.
   2. Ensure a clear understanding of the Contract Documents.
   3. Provide on-site inspection and acceptance of the roofing substrate.
   4. Coordinate the work of the various trades involved in providing the roofing system and other components secured through the roofing.
   5. The Contractor shall attend the conference with personnel directly responsible for the installation of roofing, substrate board, insulation, flashing and sheet metal work, plumbing, and the roofing materials manufacturer. Conflicts shall be resolved in writing.

B. Weekly meetings – Coordinate and schedule work with the Engineer and the Owner. While work is in progress, Contractor shall attend a mandatory work in progress meeting once a week, on a predetermined time and day. Contractor's representative needs to be able to make ongoing decisions regarding schedule, change orders, quality of workmanship, etc.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include MSDS for each product as applicable.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work. Include flashings, tie-ins, edges, terminations, expansion joints, penetrations and joints. Provide shop drawings for assemblies indicated below. Do not copy and provide Engineer's construction drawings as shop drawings.
   1. Flashing terminations.
   2. Layout and quantity of walkway pads. Include plans, dimensions, connection to roof, and relationship to adjacent roofing appurtenances.
   3. All membrane-clad sheet metal configurations.
   4. Layout of tapered insulation and/or crickets including, but not limited to, slope, heights from drain, connections/securement to structural deck.
   5. Shop drawing showing Manufacturer's required number of perimeter half sheet for project specific uplift requirements, per building.
   6. Shop drawing showing Manufacturer's required plate and fastener spacing pattern for both half sheets and field sheets for project specific uplift requirements, per building.
   7. Shop drawing showing Manufacturer's required plate and fastener spacing pattern for perimeters, base of walls, curbs, vent pipes or any other roof penetrations for project specific uplift requirements, per building.

C. Samples for Verification: Samples of each primary component to be used in the roofing system including, but not limited to, the following:
   1. Membrane roofing, of color specified.
   2. Membrane-clad metal, of each condition in color(s) selected.
   3. Flashing materials.
   4. Sealant, 11 ounce tube.
   5. Fasteners, each type used.

D. Certificates: Signed by manufacturer certifying that Contractor is a factory authorized certified applicator in good standing with the manufacturer and is qualified to perform the specified work and able to receive the required warranties.

E. Certifications: Contractor's work history data of successful warranted installations similar to that of this Project.

F. Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
   1. Submit evidence of compliance with performance requirements.

G. Certificates: By manufacturers of roofing and accessory materials that all materials supplied comply with all requirements of the identified ASTM and industry standards or practices.

H. Certificates: From the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.

I. Test Reports: UL Class A Fire Resistance approval.

J. Field quality-control reports.

K. Sample Warranties: Sample copies of manufacturer and Contractor warranties.

1.5 CLOSEOUT SUBMITTALS

A. An annotated as-built Roof Map showing the location of all test samples taken and their catalog numbers, slopes of crickets, insulation thickness, all roof penetrations test cut locations and results including mechanical, electrical, structural, custom curbs, and drains.

B. Operation and Maintenance Data.

C. Warranty Documentation.

1.6 EXTRA STOCK MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
   1. Furnish three full 6’-0” wide roll of roofing material.
   2. Furnish six 11 ounce tubes of sealant.

1.7 QUALITY ASSURANCE

A. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner’s Representative and the manufacturer.

B. Standard Test Methods for Fire Tests of Roof Coverings: Class A; UL 790

C. Manufacturer Qualifications: Qualified manufacturer with staff available for the Project to provide site visits, with inspections and written reports, performed by a technical representative of the roofing membrane manufacturer at the intervals below. Contractor to coordinate manufacturer site visits and field reports.
   1. Pre-installation meeting.
   2. Final inspection for issuance of warranty by a technical representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes.
   3. Contractor to submit copies of reports to the Engineer within 7 days of the site visit.

D. Contractor Qualifications: Qualified firm that is authorized by the membrane manufacturer prior to execution of agreement and is able to install manufacturer's products for the specified warranty.
   1. Firm shall have successfully completed manufacturer’s training as required.
   2. Contractor personnel trained and authorized by the manufacturer shall complete all work pertaining to the installation of the Work of this Section, including membrane and flashings.
   3. Use adequate amounts of such qualified workmen who are thoroughly trained in the crafts and techniques required to properly install the type of roofing system specified and other work required to complete the Work specified and within the specified time.

E. Source Limitations: No private labeled roofing membrane allowed. Manufacturer shall produce their own membrane. Obtain components for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer. Each component of roofing system shall be by single manufacturer and shall not vary on the Project.

F. Suitability of Contract Documents: Verify that the Contract Documents are workable and not in conflict with the manufacturers' recommendations and instructions prior to the start of the Work.
   1. Start of the Work constitutes acceptance of project conditions and requirements.

G. Thermoplastic membrane roofing and associated Work shall be in compliance with NRCA recommendations. Where requirements of the Contract Documents are more stringent, the more stringent shall apply.

1.8 REGULATORY REQUIREMENTS

A. Conform to California Building Code for roof assembly, fire hazard requirements and balance of requirements on the Project.

B. Conform to applicable City, County, State, and Federal requirements.

C. The applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance.
   1. American Society of Civil Engineers – ASCE 7
   2. Underwriters Laboratories, Inc. - Northbrook, IL: Class A assembly

D. Conform to the requirements of the following regulatory agencies:
   1. Bay Area Air Quality Management District
   2. OSHA
   3. EPA
   4. Local City and County Authorities

E. The Contractor shall be responsible for obtaining all necessary permits for demolition of existing roof and installation of new roofing. Coordinate the required inspections with the local authorities as required.

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the Project site in manufacturer's original, unopened packages and containers bearing the manufacturer's name and label, and the following information as applicable:
   1. Product name or title of material.
   2. Manufacturer's stock number and date of manufacture.
   3. Contents by volume, for pigment and vehicle constituents.
   4. Installation/application instructions.
   5. Color name and number.
   6. Handling instructions and precautions.
   7. VOC content.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.

C. Membrane rolls shall be stored lying down on pallets. Opened rolls shall be fully protected from the weather with clean canvas tarpaulins. Un-vented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions.

D. Do not overload roof. Load goods so as not to cause structural damage or failure, or create a safety hazard.

E. All adhesives shall be stored at temperatures between 40 degrees F and 80 degrees F unless manufacturers require more stringent temperature limits.

F. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.

G. All materials which are determined to be damaged by the Engineer, Owner or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.

H. Keep storage area neat and orderly.

1.10 FIELD CONDITIONS

A. Only as much of the roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams, including flashings, shall be cleaned and heat-welded before leaving the job site that day.

B. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.

C. All surfaces to receive new materials shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application. Do not apply roofing to damp or wet substrate.

D. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.

E. Uninterrupted waterstops shall be installed at the end of each day’s work, regardless of forecasted weather, and shall be completely removed before proceeding with the next day’s work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.

F. Certain membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with the specified membrane. The Contractor shall consult the manufacturer regarding compatibility, precautions, and recommendations.

G. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over membrane or plywood over insulation board shall be provided for all new and existing roof areas which receive rooftop traffic during construction.

H. Prior to and during application, all dirt, debris and dust shall be removed from surfaces by methods approved by the manufacturer.

I. The Applicator shall conduct fastener pullout tests in accordance with the latest revision of the SPRI/ANSI Fastener Pullout Standard to verify condition of deck/substrate and to confirm expected pullout values. Notify Engineer immediately if values do not comply.

J. Apply materials within the range of ambient and substrate temperatures recommended by the roofing manufacturer.

K. The Contractor shall verify that all roof drain lines are functioning correctly (not clogged or blocked) before starting work. Contractor shall report any such blockages in writing to the Engineer for corrective action prior to roof system installation.

L. Do not apply roofing membrane during inclement weather.

1.11 WARRANTY

A. Contractor's Labor and Material Guarantee: Correct defective Work at no cost to the Owner.
   1. Warranty Period: Five (5) years from the date of Final Completion.
   2. Warranty: Must cover damage to building and contents resulting from failure to resist penetration of water during construction.

B. Special Manufacturer's Warranty: Warranty all work under this section in a written document endorsed by the Manufacturer. Manufacturer's warranty must include membrane and accessory products covering defects in workmanship and materials; and all corrective actions necessary to repair damage to the roof membrane and separation board materials caused by roof leaks or improper application.
   1. Warranty Period: 20 years from date of Final Completion.
   2. Warranty must include coverage of ponding water areas.

PART 2 - PRODUCTS

2.1 GENERAL

A. Only submitted and approved materials shall be utilized.

B. The components of roof system are to be products of one roofing system manufacturer. Components not supplied by the manufacturer shall be approved by the primary system manufacturer for inclusion in the warranty, and be approved by the Engineer.

C. No products used on this project shall contain asbestos.

2.2 PERFORMANCE CRITERIA

A. Energy Performance: Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

B. Wind Uplift Performance: Provide assembly meeting ASCE 7 requirements for wind uplift. **Refer to Section 07 22 00, "Roof and Deck Insulation."**

2.3 MANUFACTURERS

A. In other Part 2 Articles, the following requirements apply to product selection:
   1. Membrane Manufacturer: Subject to compliance with requirements, provide one of the products specified or approved equal.

2.4 ADHERED THERMOPLASTIC MEMBRANE

A. PVC Sheet: ASTM D 4434, Type II, Grade I, glass fiber reinforced, felt backed.
   1. Subject to compliance with requirements, provide Sarnafil G410; Sarnafil Inc. or approved equal.
   2. Thickness: 60 mils.
   3. Exposed Face Color: White.

B. Other Acceptable Thermoplastic Membrane Roofing Systems: ASTM D 6754, Type II, Grade I, fabric reinforced, fleece backed.
   1. KEE Sheet: FiberTite-SM-FB.
      a. Thickness 60 mils nominal
      b. Exposed Face Color: Off-White.

C. Or a product that is Equal to "A" or "B" as described above. Equivalent membrane and manufacturers shall meet the following:
   1. Manufacturer must manufacture its own material (no private label membranes)
   2. Warranty shall not list any exclusion for ponding water conditions.
   3. Membrane shall be reinforced membrane with felt/fleece factory laminated to membrane (loose felt or slip sheets shall not be accepted.)
   4. Membrane cut seam edges shall not require sealants for the warranty specified.
   5. Solar Reflective Index: 98.5 minimum SRI, ASTM 1980

D. Membrane Performance Criteria: Criteria for thermoplastic roofing membrane includes, but is not limited to the following:
   1. Solar Reflective Index: 98 minimum
   2. Solar Reflectance: 0.83 minimum
   3. Solar Emittance: 0.90 minimum

~~2.5~~

~~MECHANICALLY ATTACHED THERMOPLASTIC MEMBRANE~~

~~A. Mechanically Attached PVC Sheet: ASTM D 4434, Type III, polyester reinforced.~~
~~1. Basis-of-Design Product: Subject to compliance with requirements, provide Sarnafil S327; Sarnafil Inc.~~
~~2. Thickness: 60 mils nominal.~~
~~3. Exposed Face Color: White.~~

~~B. Other Acceptable Thermoplastic Membrane Roofing Systems: ASTM D 6754, Type II, Grade I, fabric reinforced.~~
~~1. KEE Sheet: FiberTite-SM.~~
~~a. Thickness 60 mils nominal~~
~~b. Exposed Face Color: Off-White.~~

~~C. Or a product that is Equal to "A" or "B" as described above. Equivalent membrane and manufacturers shall meet the following:~~
~~1. Manufacturer must manufacture its own material (no private label membranes)~~
~~2. Warranty shall not list any exclusion for ponding water conditions.~~
~~3. Membrane shall be reinforced membrane with felt/fleece factory laminated to membrane (loose felt or slip sheets shall not be accepted.)~~
~~4. Membrane cut seam edges shall not require sealants for the warranty specified.~~
~~5. Solar Reflective Index: 98.5 minimum SRI, ASTM 1980~~

~~D. Membrane Performance Criteria: Criteria for thermoplastic roofing membrane includes, but is not limited to the following:~~
~~1. Solar Reflective Index: 98 minimum~~
~~2. Solar Reflectance: 0.83 minimum~~
~~3. Solar Emittance: 0.90 minimum~~

2.6 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Thermoplastic Membrane Flashing: Manufacturer's standard sheet flashing of same material, thickness, and color as PVC sheet membrane. Sheet flashing type to be manufacturer's membrane for adhered installation.
1. Sarnafil: 60 mil Sarnafil G410; PVC, ASTM D 4434, Type II, Grade I, glass fiber reinforced.
2. FiberTite: FiberTite-SM; KEE, ASTM D 6754, Type II, Grade I, fabric reinforced.

C. Membrane Clad Metal: Manufacturer's G90 hot dip galvanized steel with manufacturer's thermoplastic membrane laminated on one side.
1. G90 Galvanized Steel: 24 gauge.
2. 20 mil unreinforced membrane laminated on one side.
3. Color: Match membrane roofing.

D. Bonding Adhesive for Horizontal Membrane Securement
   1. Sarnafil: Sarnacol 2121
   2. Fibertite: FTR 190e

E. Bonding Adhesive for Vertical Membrane Securement
   1. Sarnafil: Stabond U-148A
   2. Fibertite: FTR 190e

F. Sealant
   1. Sarnafil: Sikaflex 1a
   2. Fibertite: FTR 101

G. Membrane Cleaner
   1. Sarnafil: Manufacturers approved cleaners – Refer to Sarnafil Roofing Technical Bulletin #02-13 for acceptable products.
   2. Fibertite: Manufacturers approved cleaner – Acetone

H. Termination Bar
   1. Sarnafil: Sarnabar – 14 gauge galvanized steel
   2. Fibertite: FTR T-Bar with Lip

I. Wormgear Clamp: 100 percent type 316 stainless steel wormgear clamp.

J. Membrane Fasteners and Plates including Fasteners used with Termination Bars
   1. Sarnafil: Sarnafastener – XP and Sarnadisc - XPN
   2. Fibertite: FTR Magnum Fasteners and FTR Magnum-R Stress Plates (round plate)

K. Fasteners for Membrane Clad Metal: Hot-dip galvanized ring shank nails by Maze Nails or equal.

L. Pipe/Conduit Supports
   1. Erico Pyramid Caddy Supports
   2. Dura-Blok Roof Top Supports

M. Membrane Walkway Pads
   1. Sarnafil: Sarnatred-V
   2. Fibertite: ~~Tuff-Trac Protection Material~~ **Mellow Yellow**

N. Miscellaneous Accessories: Provide other Manufacturer's approved standard roofing system accessories including: pipe/vent flashings, pre-formed inside/outside corners, T-joint covers, aluminum tape, pourable sealers (special condition requires pre-approval from Engineer), etc.

PART 3 - EXECUTION

3.1 GENERAL

A. Install thermoplastic membrane roofing system with positive slope to drains, free of standing (ponding) water.

3.2 SUBSTRATE CONDITION

A. Contractor shall be responsible for acceptance or provision of proper substrate to receive roofing materials.

B. Contractor shall verify that the work done under related sections meets the following conditions:
   1. Roof drains and/or scuppers have been reconditioned and/or replaced and installed properly.
   2. Roof curbs and nailers are properly secured and prepared to receive roofing materials.
   3. All surfaces are smooth and free of dirt, debris and incompatible materials.
   4. All surfaces are free of standing water and visible moisture.

C. All rotted or deteriorated wood shall be removed and replaced. Deck type and attachment shall conform to local code requirements. Fastener heads shall be recessed into the wood surface.

D. Broken, delaminated, wet or damaged insulation or substrate boards shall be removed and replaced.

E. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease and be structurally sound. Sharp ridges, other projections and accumulations of bitumen above the surface shall be removed to ensure a smooth surface before roofing. Roofing shall not start until all defects have been corrected.

F. Pull-out Tests: Perform pull-out tests to determine appropriate rate and type of fastener installation in presence of manufacturer’s technical representative.

3.3 SUBSTRATE PREPARATION

A. The roof deck and roof construction must be structurally sound to provide support for the roofing system. The Contractor shall load materials on the rooftop in such a manner to eliminate risk of deck overload due to concentrated weight.

3.4 ADHERED MEMBRANE ROOFING INSTALLATION

A. Install insulation and substrate board per Section 07 22 00, “Roof and Deck Insulation.”

B. Compare Manufacturer’s written instructions to those within this Section and to those of Contract Drawings. Notify Engineer immediately with any contradictions. Contractor to proceed with Work only after approval by Engineer.

C. Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.
   1. Install sheet according to ASTM D 5036.
   2. Install membrane roofing free of wrinkles.

D. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Bonding Adhesive: Apply to surfaces and at rate required by manufacturer before installing membrane roofing. Do not allow adhesive to skin over or cure prior to installation of membrane. Do not apply to seam area of membrane roofing.

F. In addition to adhering, mechanically fasten membrane roofing securely at base of wall, penetrations, drains, curbs, perimeter of roofing and where indicated.

G. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

H. Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

I. Install T-joint patches at all 3-way (or greater) membrane overlaps/intersections.

~~3.5 MECHANICALLY ATTACHED ROOFING INSTALLATION~~

~~A. Compare Manufacturer's written instructions to those within this Section and to those of Contract Drawings. Notify Engineer immediately with any contradictions. Contractor to proceed with Work only after approval by Engineer.~~

~~B. The surface of the insulation or substrate shall be inspected prior to installation of the roof membrane. The substrate shall be clean, dry, free from debris, and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation or substrate boards shall be removed and replaced.~~

~~C. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.~~

~~D. Attach membrane with fasteners according to manufacturer's and Factory Mutual's requirements, for field, perimeter and corners. Mechanically attach wall flashings. Use adhesive where required. Fasteners shall penetrate concrete blocks, wood and steel decking (top flutes) 1-1/4 inch minimum or as required by the manufacturer.~~

~~E. Tack welding of membrane of full or half-width rolls for purposes of temporary restraint during installation on windy days is not permitted.~~

~~F. Install fasteners and plates along the edge of the membrane on the fastening line at spacing as required by manufacturer.~~

~~G. Fasteners shall be installed using the fastener manufacturer's recommended torque-sensitive fastening tools with depth locators.~~

~~H. Fasteners and types shall be tested and determined by the manufacturer's technical representative prior to the start of construction to determine pull-out resistance and appropriate fastener type. Based on these results the frequency of the fasteners may be required to be increased to meet the manufacturer's requirements and shall be part of the Base Bid.~~

~~I. Apply membrane roofing with laps shingled with slope of roof deck.~~

~~J. Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.~~

~~K. Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations, fasteners and plates shall be installed according to manufacturer's perimeter rate of attachment for the specified wind uplift.~~

~~L. Install T-joint patches at all 3-way (or greater) membrane overlaps/intersections.~~

3.6 HOT-AIR WELDING

A. Seam overlaps shall be 3 inches wide when automatic machine welding and 4 inches wide when hand welding.

B. Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.
   1. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
   2. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1-1/2 inch wide nozzle recommended for use. For corners and compound connections, the 3/4 inch wide nozzle shall be used.

C. Machine welded seams are achieved by the use of Manufacturer's automatic welding equipment. When using this equipment, Manufacturer's instructions shall be followed.

D. Correct welds display failure from shearing of the membrane prior to separation of the weld.
   1. Minimum passing weld, machine weld: 1 inch.
   2. Minimum passing weld, hand weld: 3/4 inch.

3.7 QUALITY CONTROL OF WELDED SEAMS

A. The Applicator shall check all welded seams daily for continuity using an approved probing tool.

B. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the underside of the top membrane.

C. On-site evaluation of welded seams shall be made daily by the Applicator at locations as directed by the Engineer, Owner or manufacturer's representative.

D. A minimum of one inch wide cross-section samples of welded seams shall be taken at least three times a day. Applicator shall tack weld physical sample over patch and date patch/sample with permanent marker.

E. Correct welds display failure from shearing of the membrane prior to separation of the weld.

F. The Engineer may take seam cut test samples randomly during application. The Contractor shall fully cooperate and repair test samples and identified deficiencies promptly at no additional cost to Owner.

3.8 BASE FLASHING INSTALLATION

A. All flashings shall be installed concurrently with the roof membrane as the job progresses. All membrane shall be fully welded each day.

B. No temporary flashings shall be allowed without the prior written approval of the Engineer and manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.

C. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.

D. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses.

E. Apply bonding adhesive per manufacturer’s instructions. Adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Do not apply to seam area of flashing.

F. Refer to detail drawings for flashing work. Comply with manufacturer requirements if more stringent.

G. Provide enhanced securement of the membrane at the base of parapets, walls, curbs, penetrations, and drains. Refer to detail drawings.

H. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

I. Terminate and seal top of membrane flashings and mechanically anchor to substrate through termination bars fastened at 6 inches on center.
   1. Coordinate flashing with counterflashing/coping installation.

J. Terminate and seal top of penetration flashings with stainless steel wormgear clamp and sealant.
   1. Coordinate flashing with umbrella installation.

K. All flashings shall extend a minimum of 8 inches above roofing level. All flashings that exceed 30 inches in height shall receive additional securement. See Contract Drawings for additional securement requirements.

3.9 MEMBRANE CLAD METAL INSTALLATION

A. Edge Metal: Secure edge metal to substrate at 3 inches on center staggered unless otherwise noted. Provide 1/4-inch gap between sections. Strip in with 2-inch wide tape over joints. Encapsulate tape and joint with 4-inch wide strip of thermoplastic membrane.

3.10 WALKWAY PAD INSTALLATION

A. Install walkway pads in accordance with manufacturer’s written instructions and recommendations. Install where indicated on the Contract Drawings

B. Roofing membrane to receive walkway membrane shall be clean and dry.

C. Place chalk lines on deck sheet to indicate location of walkway.

D. Inspect all existing deck membrane seams that are to be covered by Walkway with probing tool and re-weld any inconsistencies before Walkway installation.
   1. Area to receive walkway protection membrane shall be reviewed and approved by the Engineer and manufacturer prior to the installation of the walkway pad.

E. Clean the deck membrane in areas to be welded.

F. Provide 2-inch gap between walkway sections and between walkway and roof mounted items.

G. Fully weld perimeter walkway.

3.11 MISCELLANEOUS MATERIALS

A. Pipe/Conduit Supports: Install pipe supports where indicated and where necessary to support piping. Secure piping to pipe support in accordance with manufacturer's written instructions and recommendations.

3.12 TEMPORARY CUT-OFF

A. All temporary waterstops shall be constructed to provide a 100 percent watertight seal.

B. The waterstop shall be sealed to the (e) roofing that water will not be allowed to travel under the new or existing roofing.

C. If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.

D. The edge of the membrane shall be sealed in a continuous heavy application of manufacturer approved sealant.

E. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers and other components of waterstop shall be removed from the work area and properly disposed of off-site. None of these materials shall be used in the new work.

F. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

3.13 CLEANING

A. Remove and dispose of roofing debris on a daily basis. Protect all newly installed roof surfaces.

B. Clean all contaminants generated by roofing work from building and surrounding areas, including, but not limited to, adhesives, sealants and coatings.

C. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

D. Repair or replace components of roofing system and finished surfaces damaged or defaced due to the Work of this Project; comply with recommendations of manufacturers of components and surfaces.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional Work with specified requirements.

F. Prior to final inspection, Contractor shall clean the roof membrane to permit inspection of all seams. Cleaning shall remove all surface containments.

G. Contractor is responsible for the cleaning and removal of all debris or residue that is tracked from existing roof areas to the installed thermoplastic membrane.

3.14 CLOSEOUT ACTIVITIES

A. Final Roof Membrane Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Engineer.
   1. Notify Engineer and Owner 48 hours in advance of date and time of inspection.
   2. Substantial Completion: A “no-defect” final roof membrane inspection report is required prior to the Contractor requesting the Substantial Completion review

3.15 PROTECTION

A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

B. All landscaped areas and adjacent construction damaged by construction activities shall be repaired at no cost to the Owner.

3.16 FIELD QUALITY CONTROL

A. Testing Agency: Owner shall engage a qualified third party testing agency to perform tests and inspections.

B. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Manufactured reglets and counterflashing.
2. Formed low-slope roof sheet metal fabrications.
3. Roof drainage sheet metal fabrication
4. High temperature self-adhering flashing.
5. Painting
6. Joint sealants associated with sheet metal flashing.
7. Other sheet metal as indicated.

1.2 RELATED REQUIREMENTS

A. Section 07 54 00 “Thermoplastic Membrane Roofing;” for procedural and administrative, product and execution requirements for membrane clad metal referred to in this Section.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: A preinstallation meeting shall be held at the project site prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this Work with related and adjacent Work. Verify that final details comply with current recommendations published in SMACNA’s "Architectural Sheet Metal Manual" and NRCA’s Roofing and Waterproofing Manual. Meeting attendees shall include representatives for the Owner, Engineer, inspection firm, Contractor, sheet metal contractor and installers of related and adjacent Work.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
1. Identification of material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
4. Details of termination points and assemblies, including fixed points.
5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.

6. Details of perimeter conditions.
7. Details of specialized conditions including saddles, transitions and terminations in sheet metal flashing.
8. Details of connections to adjoining work.
9. Detail formed flashing and trim at a scale of not less than 3 inches per 12 inches.

C. Samples: for Initial Selection: For each type of sheet metal flashing and accessory indicated with factory-applied color finishes involving color selection.
1. 6” square samples of specified sheet metal materials to be exposed as finished surfaces.
2. 12” long samples of factory-fabricated products exposed as finished Work. Provide complete with specified factory finish.
3. One 11 oz. tube of each specified sealant.
4. Two samples each of proposed fasteners and accessories to be used.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
3. Accessories and Miscellaneous Materials: Full-size Sample.

E. Qualification Statements: For qualified fabricator.

F. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing similar to that required for this Project and whose products have a record of successful in-service performance.

B. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

C. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.
2. Build mockup of each fabrication, including, but not limited to, saddles, coping, reglet and counterflashing, approximately 10 feet long, including inside corners, outside corners, supporting construction cleats, seams, attachments, underlayment, and accessories.

3. Locate mockups on-site in the location and of the size indicated or, if not indicated, as directed by Engineer.
4. Notify the Owner and the Engineer one week in advance of the dates and times when mockups will be constructed.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Engineer's approval of mockups before start of final unit of Work.
7. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing installation.

1.8 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

B. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace sheet metal flashing and trim that does not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE CRITERIA

A. General: Sheet metal flashing assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction.
1. Completed sheet metal flashing shall not rattle, leak, or loosen, and shall remain watertight.

B. Install systems to allow movement of components without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subjected to 100-year seasonal temperature ranges.

C. Thermal Movements: Provide sheet metal flashing that allows for thermal movements from ambient and surface temperature changes.
   1. Temperature Change (Range): 120 degrees F, ambient; 180 degrees F, material surfaces.

D. Install specialized, custom fabricated, sheet metal saddles for waterproof performance at terminations and transitions of sheet metal flashing and trim such as multi-plane intersects, and:
   1. Where indicated.
   2. Where constructed conditions will not provide watertight performance without saddles.

E. Install specialized, custom fabricated, sheet metal saddles for waterproof performance at terminations and transitions of construction components such as multi-plane intersects, and:
   1. Where indicated.
   2. Where constructed conditions will not provide watertight performance without saddles.

F. Contractor shall inspect transitions and terminations to make Project watertight. Contract Documents indicate design intent and may not indicate all instances where saddles apply. Field verify locations where saddles are required.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. Metallic (Kynar) Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
   1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality.
   2. Surface: Mill phosphatized for field painting.
   3. Exposed Coil-Coated Finish:
      a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.
   4. Location: Copings, edge-metal (Skyline Bldg. 14), gutters, and where indicated.
   5. Color: As selected by Owner from manufacturer's full range including custom colors.

C. Metallic-Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process.
   1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality.
   2. Finish: Smooth, flat and bonderized for painting.
   3. Locations: For use with all sheet metal, unless otherwise indicated.
   4. Prime all surfaces of bonderized metal.
   5. Paint: Provide pretreatment, primer and two coats 100 percent acrylic paint by Kelly Moore or approved equal.
      a. Pretreatment: Jasco Prep-n-Prime
      b. Primer: #5725 DTM Acrylic Primer Finish
      c. 100% Acrylic, Low Sheen: #1245 Acry-Plex Low Sheen, 2.0 mils
      d. 100% Acrylic, Low Sheen: #1245 Acry-Plex Low Sheen, 2.0 mils
      e. Location: Counterflashing and where indicated.

D. Lead sheet for use in flashing shall be minimum 4 lb. soft lead.

2.3 ROOF DRAINAGE SHEET METAL FABRICATIONS

A. Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96 inch long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters.
   1. Fabricate from the following materials:
      a. Galvanized Steel: 24 gauge.

B. Downspouts: Galvanized steel, schedule 40, hot-dipped.

2.4 HIGH TEMPERATURE SELF-ADHERING FLASHING

A. High temperature self-adhering flashing, polyethylene faced: ASTM D 1970, min. of 30 mils thick; slip-resisting, polyethylene-film-reinforced top surface laminated to butyl rubber adhesive, with release-paper backing; cold applied.
   1. Products: Grace Ultra; W.R. Grace Construction Products or approved equal.

B. Primer: Manufacturer's recommended primer for improved adhesion to substrates.

2.5 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Solder:
   1. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
   2. For Stainless Steel: ASTM B 32, Grade Sn60, with an acid flux of type recommended by stainless-steel sheet manufacturer.

C. Concealed Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
   1. Subject to compliance with requirements, provide ADCO GT-106; ADCO or approved equal.
   2. Provide pre-shimmed butyl sealant tape between sheet metal laps, at concealed locations, and where indicated.

D. Exposed Sealants: Elastomeric Sealant ASTM C 920, elastomeric polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
   1. Refer to Section 07 92 00 – Joint Sealants.

E. Concealed Sealant: ASTM C 1311, single-component, non-curing, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
   1. Subject to compliance with requirements, provide ADCO BP-300; ADCO or approved equal.
   2. Provide butyl sealant between sheet metal laps, at concealed locations, and where indicated.

F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

G. Sealing Washers: Stainless steel backed EPDM washers.

2.6 FASTENERS

A. Annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item. Nails to be secured into wood shall be annular threaded.

B. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
   1. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
   2. Blind Fasteners: High-strength stainless-steel rivets suitable for metal being fastened.

C. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Type 304 stainless steel.
   1. Provide Type 304 stainless steel fasteners where fastening through pressure treated wood.

D. Fasteners for Zinc-Coated (Galvanized) Steel Sheet Metal to Zinc-Coated (Galvanized) Steel Sheet Metal Components: No.10, hot-dip galvanized sheet metal screws equipped with sealing washers.

E. Fasteners for Stainless Steel Sheet: Type 304 stainless steel.

F. Fasteners for Stainless-Steel Sheet Metal to Stainless-Steel Sheet Metal Components: No.10, stainless steel sheet metal screws equipped with sealing washers.

G. Drive Pin Anchors: Subject to compliance with requirements provide Zamac Nailin; Powers Fasteners or approved equal.
   1. Body: Zamac alloy, mushroom.
   2. Pin: Type 304 stainless steel.

H. Fastener Length: Fasteners shall be sized to penetrate substrate not less than 1-1/4 inches or not less than 3/4 inch through wood substrates.

2.7 COUNTERFLASHING

A. Counterflashing: Fry Reglet Sprinklok Flashing System
   1. Type: ST 2-piece **for Skyline Building 14.**
   2. Type: SM 2-piece for CSM Buidling 1.

2.8 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
   1. Sheet metal components requiring fabrication must have shop drawings submitted and approved prior to fabrication and delivery to the project site. Materials delivered to the project site without the required Engineer's approval shall be immediately removed from the site and not incorporated into the completed Work.
   2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
   3. Obtain field measurements for accurate fit before shop fabrication.
   4. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
   5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
   6. Field verify dimensions prior to fabrication.
   7. Solder sheet metal prior to application of finish.
   8. Flashings shall have minimum 4 inch vertical back leg and 2 inch overlap at exposed side.

B. Materials delivered to the project site without the required Engineer's approval shall be immediately removed from the site and shall not be incorporated into the completed Work.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to specified tolerance.

D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.

E. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

G. Seams: Solder all seams watertight with the exception seams of prefinished metals including those coil-coated, seams requiring movement and seams otherwise indicated in the Contract Documents.
   1. Fabricate nonmoving seams with flat-lock seams. Pop rivet pieces together at 1 inch on center prior to soldering. Tin edges to be seamed, form seams, and solder. Sweat solder the lap. Solder rivet holes watertight.

H. Coil-Coated Seams: Fabricate nonmoving seams with flat-lock seams. Lap seams 4 inches and seal in a full bed of butyl sealant. Apply butyl sealant so it does not ooze out of seam. Rivet joints at 1 inch on center. Apply polyurethane sealant over rivets.

I. Form pieces to a minimum length of 8 feet with the exception of pieces with a total length of less than 8 feet.

J. Form pieces to maximum length of 10 feet.

K. Corners: Sheet metal corner flashing shall be fully soldered to form one watertight piece.

L. Hem exposed edges on underside 1/2 inch.

M. Fabricate head flashing, sill flashing and similar with end closures and end dams soldered/welded watertight.

N. Provide drip edges where indicated on the Contract Drawings.

O. Provide 4 inch minimum wide horizontal flanges, where dimension is not indicated on Contract Drawings.

2.9 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Copings: Fabricate in minimum 96-inch long, but not exceeding 10-foot long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight. Fabricate from the following materials:

2.10 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Saddles, Transitions, and Terminations in Sheet Metal Flashing and Trim: Fabricate from the following materials:

B. Provide specialized, custom fabricated, sheet metal saddles for waterproof performance at terminations and transitions of sheet metal flashing and trim and construction components such as multi-plane intersects, and:
1. Where indicated.
2. Where constructed conditions will not provide watertight performance without saddles.
3. Contractor shall inspect transitions and terminations to make Project watertight. Contract Documents indicate design intent and may not indicate all instances where saddles apply. Field verify locations where saddles are required.

C. Fabricate saddles with diverters, minimum 1/2 inch high by 1 inch deep at multi-plane intersects and where indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 HIGH TEMPERATURE SELF-ADHERING FLASHING INSTALLATION

A. High Temperature Self-Adhering Flashing: Install self-adhering sheet flashing, wrinkle free.
   1. Apply primer where required by manufacturer and as necessary to achieve proper adhesion between self-adhering flashing and substrate.
   2. Comply with temperature restrictions of manufacturer for installation; use primer rather than nails for installing self-adhering flashing at low temperatures.
   3. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover self-adhering flashing within 14 days.

3.3 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement so that completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
   1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
   2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
   3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
   4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
   5. Install sealant tape where indicated.
   6. Torch cutting of sheet metal flashing and trim is not permitted.

B. Install all metal flashing and sheet metal in accordance with the recommendations of:
   1. SMACNA Architectural Sheet Metal Manual.
   2. NRCA Roofing and Waterproofing Manual.

C. The requirements of this Section supersede the above noted references except where the requirements of the reference specification are more stringent.

D. Saddles: Secure with fasteners and sealing washers and continuous cleat.

E. Do not fabricate or install any sheet metal item without the Engineer’s written approval.

F. Lap joints in direction of water flow.

G. Exercise care when cutting materials on site, to ensure cuttings do not remain on finished surfaces. Carefully clean and dispose of cuttings so not to damage adjacent materials. Repair or replace damaged materials at no additional cost to the Owner.

H. Use concealed fasteners except where specifically approved by the Engineer. Provide expansion joints concealed within system.

I. Flash and counter flash mechanical and electrical items projecting through roof membrane.

J. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
   1. Where installing metal flashing directly on cementitious or wood substrates, install a course of high temperature self-adhering flashing.

K. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

L. Solder or seal all seams and end joints as shown in the Drawings or required by field conditions. Measure all dimensions in the field necessary to properly fabricate the flashings. Fit flashings tight in place, however, allow for 3/4 inch minimum clearance to install components. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

M. Seal joints as shown and as required for watertight construction.
   1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant.
   2. Form joints to completely conceal sealant.
   3. When ambient temperature at time of installation is moderate, between 40 and 70 degrees F, set joint members for 50 percent movement each way.
   4. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 degrees F.
   5. Lap sheet metal flashing and trim 4 inches in a full bed of sealant. Sealant shall be fully concealed. Remove visible sealant.
   6. Rivet sealed laps at 1 inch on center.
   7. Apply sealant over rivets.
   8. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."
   9. Install compatible sealants where required to prevent direct weather penetration.

N. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
   1. Do not solder coil-coated or membrane-clad sheet metal.
   2. Neatly solder all sheet metal to be soldered.
   3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
   4. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.
   5. All flat lock seams and lap seams, where soldered, shall be at least 1/2 inch. Pop rivet pieces together 1 inch on center prior to soldering. Sweat solder under the lap. Do not bead solder. Solder rivet holes to be water tight.
   6. Thoroughly wash all flux off work after soldering. Failure to do this may result in back charges as a result of damages to finishes.

O. Rivets: Rivet joints where indicated and where necessary for strength at 1 inch on center, unless otherwise indicated. Apply sealant over rivets.

P. Paint metal where indicated in strict accordance with manufacturer’s written instructions, including minimum dry mil thicknesses.

3.4 LOW-SLOPE ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

B. Copings: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated.
   1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate.
   2. Anchor interior leg of coping with washers and screw fasteners through slotted holes.

C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with sealant.

D. Edge Metal: Secure edge metal to substrate at 3 inches on center staggered unless otherwise noted.

3.5 ROOF DRAINAGE SHEET METAL INSTALLATION

A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.

B. Gutters: Join sections with lapped joints riveted and sealed with sealant. Provide for thermal expansion. Attach gutters at fascia to firmly anchored gutter brackets spaced not more than 36 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
   1. Install gutter with expansion joints at locations indicated, but not exceeding, 40 feet apart. Install expansion-joint caps.

C. Downspouts: Connect downspouts to gutters. Join sections with 1-1/2-inch telescoping joints.
   1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches on center in between.
   2. Provide elbows at base of downspout to direct water away from building.
   3. Connect downspouts to underground drainage system where occurs.
   4. Install splash block under downspout where underground drainage system does not occur.

3.6 MISCELLANEOUS FLASHING INSTALLATION

A. Saddles, Transitions, and Terminations: Coordinate installation of saddles, transitions, and terminations with installation of siding, self-adhering sheet waterproofing, weather resistive barrier, and other components of the construction.
   1. Miscellaneous flashing not installed in accordance with the Contract Documents will require the removal and reinstallation of construction to properly install the required flashing at no additional cost to the Owner.

3.7 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.8 PAINTING

A. Prepare substrate in strict accordance with manufacturer's written instructions. If there is conflict between the manufacturer's instructions and the Contract Documents, the more stringent shall apply.

B. Galvanized Steel: Clean galvanized surfaces with non-petroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Clean previously painted surfaces according to manufacturer's written instructions.

C. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied. If there are discrepancies between the manufacturer's instructions and the Contract Documents, the more stringent shall govern.
   1. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
   2. Provide finish coats that are compatible with primers used.
   3. Paint surfaces behind movable equipment the same as similar exposed surfaces.
   4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

D. Wind Conditions:
   1. Apply paint materials using a spray gun only when no wind conditions exist above 10 miles per hour.
   2. When wind conditions exceed 10 miles per hour, apply paint materials using rollers and brushes.
   3. Carefully monitor and avoid paint overspray in any kind of wind condition.

E. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

F. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.

G. Apply at rates recommended on manufacturer's label. Do not exceed application rate recommended for the surface involved. Use materials without adulteration and only with thinning agents recommended by the manufacturer in the printed instructions.

H. Apply materials with suitable brushes, rollers, or spraying equipment. Keep brushes, rollers and spraying equipment, clean, free from contaminants and suitable for the finish required.

I. Vary slightly the color of successive coats under the finish coat.

J. Allow sufficient time between successive coats to permit proper drying. Do not re-coat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
   1. Comply with the recommendation of the manufacturer for drying time between succeeding coats.

K. Sand and dust between each coat to remove defects visible from a distance of 5 feet.

L. Apply paints smooth, free of brush marks, streaks, laps, pile-up of paint, runs, sags, holidays, air bubbles, and excessive roller stipple. Apply additional finish coats to entire surface if undercoats show through and to correct any defect.

M. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

N. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

O. Make edges of paint adjoining other materials or colors clean and sharp with no overlapping.

P. Maintain a wet edge to avoid lap marks.

Q. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
   1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted. Back-brush bottom edge of siding to ensure full coverage of all areas.
   2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
   3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

R. Minimum Coating Thickness: Apply paint materials no thinner than manufacturers recommended spreading rate. (Prime and two finish coats.)

S. Completed Work: Match approved mockups for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements

3.9 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer’s written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes roof hatches.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of roof accessory indicated.

B. Shop Drawings: For roof accessories.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items.

B. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Competent and experienced firm capable of installing roof hatches, ladders, and accessories to attain designed operational and structural performance.

1.6 WARRANTIES

A. Roof Hatch and Accessories: Manufacturer’s standard form stating that roof hatch and accessories shall operate to the customer’s satisfaction and to provide years of trouble free service. Should a part fail to function in normal use within a period of five (5) years from the date of purchase, a new part will be furnished at no charge.

B. Ladder: Manufacturer’s standard form stating that manufacturer has responsibility for an extended Corrective Period for work of this Section for a period of 5 years from date of Substantial Completion against all the conditions indicated below, and when notified in writing from Owner, manufacturer shall promptly and without inconvenience and cost to Owner correct said deficiencies.
   1. Defects in materials and workmanship.

2. Deterioration of material and surface performance below minimum OSHA standards as certified by independent third party testing laboratory.

PART 2 - PRODUCTS

2.1 ROOF HATCH

A. Roof Hatches: Metal ladder access roof-hatch units with lids and insulated single-walled curbs, welded corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, and integrally formed deck-mounting flange at perimeter bottom.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Type S roof hatch by The Bilco Company or approved equal.

B. Size: 36 inch by 30 inch.

C. Hatch Material: Stainless-steel sheet, 14 gauge, type 304.

D. Finish: Type 304 stainless steel with bead blast finish.

E. Construction:
   1. Hatch Lid: Breakformed, hollow-metal design with 1 inch concealed fiberglass insulation, 3 inches beaded, overlapping flange, fully welded at corners, and internally reinforced for 40 psf live load
   2. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.
   3. Curb: 12 inch in height with integral cap flashing, 1 inch fiberboard insulation, fully welded at corners, and 3-1/2 inch mounting flange with 7/16 inch holes provided for securing frame to the roof deck.
   4. Gasket: Extruded EPDM rubber gasket permanently adhered to cover.

F. Hardware: Type 316 stainless steel.
   1. Hinges: Heavy-duty pintle hinges with 3/8" Type 316 stainless steel hinge pins.
   2. Latch: Slam latch with interior and exterior turn handles and padlock hasps.
   3. Lift Assistance: Compression spring operators enclosed in telescopic tubes. Automatic hold-open arm with grip handle release.

G. Safety Railing System: Roof-hatch manufacturer's system with non-penetrating attachment including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; attached to roof hatch and complying with 29 CFR 1910.23 requirements and authorities having jurisdiction.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Bil-Guard Hatch Railing System RL-S by The Bilco Company or approved equal

H. Ladder-Assist Post: Roof-hatch manufacturer's standard device for attachment to roof-access ladder. Post locks in place on full extension; release mechanism returns post to closed position.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Ladderup Safety Post LU-1 by The Bilco Company or approved equal.

2.2 LADDER

A. Heavy duty aluminum tubular rail fixed access ladder.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Model 501 by O'Keefe's Inc. or approved equal

B. Ladder Properties:
   1. Finish: Color to be selected by Owner from manufacturer's full range of finishes.
   2. Rungs: Not less than 1-1/4 inches in section and 18–3/8 inches long, formed from tubular aluminum extrusions. Squared and deeply serrated on all sides.
      a. Rungs shall withstand a 1,500 poundload without deformation or failure.
   3. Channel Side Rails: Not less than 1/8 inch wall thickness by 3 inches wide,
   4. Heavy Duty Tubular Side Rails: Assembled from two interlocking aluminum extrusions no less than 1/8 inch wall thickness by 3 inches wide. Construction shall be self-locking stainless steel fasteners, full penetration TIG welds and clean, smooth and burr-free surfaces

2.3 PERFORMANCE CRITERIA

A. Roof hatch shall comply with UL 790 Class A (burning brand test).

2.4 METAL MATERIALS

A. Stainless-Steel Sheet and Shapes: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.5 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, and other miscellaneous items required by manufacturer for a complete installation.

B. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.
   1. Fasten through stainless steel backed EPDM washers where exposed to the exterior.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.
   1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
   2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
   3. Use fasteners, separators, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
   4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
   1. Coat concealed side of stainless-steel roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
   2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.

3.2 REPAIR AND CLEANING

A. Replace roof accessories that have been damaged or that cannot be successfully repaired by minor repair procedures.

B. Clean and protect roof accessories after completion of the Work of this Section.

END OF SECTION

SECTION 09 24 00

PORTLAND CEMENT PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Exterior portland cement plasterwork (stucco) repair on metal lath.
   2. The extent of portland cement plaster (stucco) repair is shown or noted on the Drawings.
   3. Exterior painting of plaster repairs to be coordinated by Owner.

B. Perform mockups as described in the Contract Documents.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each texture and finish indicated.

1.3 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. Mockups: Before plastering, install mockups of at least 50 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Install mockups for each type of finish.
   2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project site in manufacturer's original, unopened packages and containers bearing the manufacturer's name and label, and the following information:
   1. Product name or title of material.
   2. Manufacturer's stock number and date of manufacture.
   3. Contents by volume, for pigment and vehicle constituents.
   4. Thinning instructions (if permitted).
   5. Application instructions.
   6. Color name and number.
   7. Handling instructions and precautions.
   8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area in an ambient temperature range of 50 deg F to 85 degrees F. Store leveler off of the ground in a dry area.

C. Maintain containers in a clean condition, free of foreign materials and residue.

D. Protect materials from freezing.

E. Keep storage area neat and orderly.

F. Remove oily rags and waste daily.

G. Take necessary measures to ensure workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying materials.

H. Store rolls on end.

1.5 PROJECT CONDITIONS

A. Comply with ASTM C 926 requirements.

B. Exterior Plasterwork: Apply plaster and allow for 24 hour dry time when ambient temperature is greater than 40 deg F (4.4 deg C).

1.6 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Contractors Labor Guarantee: 5 years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CEMENT PLASTER SYSTEM

A. Cement plaster system shall be in compliance with ASTM C926.
1. 2-Coat System Thickness: To match existing.

2.2 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I.

B. Lime: ASTM C 206, Type S.

C. Sand Aggregate: ASTM C 897.

2.3 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.
   1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

B. Base-Coat Mixes for Use over Concrete: Single base (scratch) coat for two-coat plasterwork as follows:
   1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 0 to 3/4 part lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.

C. Finish Coat Mixes for Use over Concrete:
   1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime.
   2. Use aggregate mix as necessary to match existing finish.

2.4 ACCESSORIES

A. Manufacturer: Subject to compliance with requirements, provide accessories by Cemco Water Management Products or approved equal.
   1. Material: G90 hot-dip galvanized.
   2. Thickness: 26 gage, unless otherwise indicated.

B. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required to match existing.

C. Provide accessories to the extent necessary to match existing conditions in the area of repair.

D. Zinc and Zinc-Coated (Galvanized) Accessories as necessary to complete the Work:
   1. Drip Screed: Fabricated from zinc-coated (galvanized) steel.
      a. Arches: Prefabricate radiused drips for arch conditions.

2.5 MISCELLANEOUS MATERIALS

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Bonding Agent: Epoxy resin adhesive.
   1. Sikadur 32, Hi-Mod LPL; Sika or approved equal.

C. Fasteners for Attaching Metal Lath to Substrates: Comply with ASTM C 1063.

D. Paint: Paint to match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with the Applicator present, under which textured finish system will be applied for compliance with application requirements.

B. Surfaces to receive finish system must be thoroughly dry before materials are applied.

C. Notify the Engineer in writing of anticipated problems using products specified over existing substrates.

D. Begin application only after unsatisfactory conditions have been corrected and surfaces to receive materials are thoroughly dry.

E. Start of application within a particular area will be construed as the Applicator's acceptance of surface conditions.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated.
   1. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and product application.
   2. After completing operations in each area, reinstall items removed, using workers skilled in trades involved.

B. Cleaning: Before applying materials or other surface treatments, clean substrates of substances that could impair bond of coating systems.
   1. Remove oil and grease before cleaning.
   2. Schedule cleaning and materials application so dust and other contaminates will not fall on wet, newly applied surfaces.

C. Surface Preparation: Clean and prepare surfaces to be receiving materials according to the manufacturers written instructions for the particular substrate conditions and as specified.
   1. Cementitious Surfaces: Prepare surfaces to receive materials. Sand blast off existing elastomeric paints to achieve bare stucco surface.
   2. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.
   3. Remove mildew and neutralize surfaces according to manufacturer's written recommendations before patching materials are applied.
   4. Do not apply materials over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

D. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

E. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

3.3 CUTTING AND PATCHING

A. Carefully cut existing plaster to allow the installation of work.
   1. Score the existing surface with a diamond blade and carefully chisel existing cement plaster away from existing metal lath.
   2. Grind the existing finish coat 4 inches beyond removed cement plaster.
   3. Under-cut existing plaster edge to create a dovetail connection with the repair plaster.
   4. Protect existing metal lath and paper backing to the greatest extent possible.
   5. Protect keys of surround plaster.

B. Patch and repair plaster as necessary to accommodate the other work and to match existing adjacent finishes to the greatest extent possible.
   1. Apply bonding agent at joint between existing stucco and repair.

3.4 INSTALLING ACCESSORIES

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Control Joints: Install control joints to match existing locations.

3.5 PLASTER APPLICATION

A. General: Comply with ASTM C 926 and manufacturer's recommendations and written instructions.
   1. Apply cement plaster without interruption to avoid cold joints in appearance. Abut wet cement plaster to set cement plaster at natural or architectural breaks in the wall such as expansion joints, terminations or changes in plane.
   2. Do not install cement plaster during extremely hot, dry and/or windy conditions.
   3. Do not install cement plaster during freezing conditions or on frozen substrates.
   4. Do not install cement plaster onto grounds of accessories.
   5. Completely embed lath and flanges of accessories and completely cover attachments with cement plaster.
   6. Should cement plaster get into control or expansion joints, remove the cement plaster from within the joint before the cement plaster sets.
   7. Clean and prepare area to receive plaster in accordance with manufacturer's recommendations.

B. Clean and prepare area to receive repair plaster in accordance with manufacturer's recommendations.

C. Bonding Agent: Apply at butt joint between existing and repair plaster.

D. Plaster Coats: Apply repair plaster in coats and thicknesses required to match existing adjacent plaster and to provide finish that matches existing adjacent surfaces. Apply finish coat in texture to match existing adjacent cement plaster.

3.6 PAINT

A. Coordinate with Owner for painting requirements.

3.7 FIELD QUALITY CONTROL

A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when coating operations are being conducted:
   1. The Owner will engage the services of a qualified independent testing and inspecting agency to sample materials used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in presence of the Contractor.
   2. The testing and inspecting agency will perform appropriate tests, as required by the Owner.
   3. If results show materials do not comply with requirements, the Contractor may be directed to stop work, remove noncomplying materials, pay for testing, recoat surfaces coated with rejected materials, or remove rejected materials from previously coated surfaces if, on recoating with specified materials, the 2 materials are not compatible.

3.8 CLEANING

A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from the Project site.
   1. After completing coating work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

3.9 PROTECTION

A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating as approved by the Engineer. Leave in an undamaged condition.

B. Provide "Wet Paint" signs to protect newly applied materials. Remove temporary protective wrappings provided by others to protect their work after completing coating operations.
   1. After construction activities of other trades are complete, touch up and restore damaged or defaced surfaces.

END OF SECTION

SECTION 22 14 13

FACILITY STORM DRAINAGE PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Replace existing roof and overflow drains and associated strainers/clamping rings/accessories, and tie into existing piping.

B. Clean all plumbing drains and overflows from roof to storm sewer.

1.2 REFERENCES

A. American National Standards Institute (ANSI) Publications
   1. A112.21.2M-83 Roof Drains

B. American Society for Testing and Materials (ASTM) Publications
   1. ASTM C 564-70 Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
   2. ASTM A 74-87 Cast-Iron Soil Pipe and Fittings
   3. ASTM C 552-86 Cellular Glass Thermal Insulation

C. Cast-Iron Soil Pipe Institute (CISPI) Publications
   1. CISPI 301-85 Cast-Iron Soil Pipe and Fittings for Hubless Cast-Iron Sanitary Systems
   2. CISPI 310-85 Patented Joint for Use in Connection with Hubless Cast-Iron Sanitary Systems.

D. International Code Council (ICC) Publication
   1. California Building Code, latest edition

E. International Association of Plumbing and Mechanical Officials (IAPMO) Publication
   1. California Plumbing Code, latest edition

1.3 SUBMITTALS

A. Manufacturer’s Data and Product Samples:
   1. Strainers
   2. Drain Rings and Bolts
   3. Domes

1.4 QUALITY ASSURANCE

A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

1.5 APPLICATOR QUALIFICATIONS

A. Company specializing in plumbing installation.

B. Minimum of five (5) years documented experience.

C. Licensed to do business as a plumbing contractor in the state of California.

1.6 REGULATORY REQUIREMENTS

A. Conform to all local, county, and state building requirements.

B. The Contractor shall be responsible for obtaining all necessary permits for demolition of existing plumbing fixtures and installation of the Work.

C. The Contractor shall be responsible for scheduling all tests and inspections with municipal building inspectors.

PART 2 - PRODUCTS

2.1 GENERAL

A. Only submitted and approved materials shall be utilized.

B. No products utilized within this project shall contain asbestos.

2.2 ROOF AND OVERFLOW DRAINS

A. Clamping rings for use with roofing.

B. Integral non-puncturing flashing clamp device.

C. Removable cast-iron locking dome strainer.

PART 3 - EXECUTION

3.1 GENERAL

A. Provide and install drain and overflow bowls, fittings and connections to obtain a fully functional roof drainage system.

B. All work shall closely conform to the California Plumbing Code.

C. The Contractor shall responsible for locating and avoiding all hidden construction while installing Work. The Contractor is solely responsible for making all investigations required to install the Work without damage to other building components. Any such damage shall be repaired at the Contractor's expense and to the Owner's satisfaction. In the event that the Contractor's repairs are unacceptable to the Owner, the Owner will take corrective action and back-charge the Contractor for all restoration costs resulting from the failure to satisfactorily restore the building to original condition.

D. Closely coordinate all drain Work with that specified in Division 7.

3.2 EXAMINATION

A. Prior to demolishing the existing roof system, the Contractor shall examine all roof drains to determine if the existing roof drains are serviceable.

B. The Contractor shall provide the Owner with a written statement of the existing roof drain serviceability prior to demolition.

C. The Contractor shall provide the Owner with a written letter stating the proposed modified roof drainage system can be installed without damage to the existing structure or appurtenances.

D. The Contractor shall immediately report all unacceptable conditions to the Owner and not proceed until condition is resolved in writing.

3.3 FLASHING OF ROOF DRAIN

A. Closely coordinate drain Work with roofing installation.

3.4 CLEANING OF DRAINAGE SYSTEM

A. After drain Work and roofing is complete, clean all drain and overflow piping of debris and clogs such that the system is free flowing.

B. Utilize "Roto-Rooter" type equipment down from the roof to the storm sewer connections for each drain location.

C. Clean each roof drain and overflow drain.

D. Owner's Representative must be present during cleaning. Provide the Owner 48 hours notice prior to cleaning to arrange for observation of Work.

3.5 FIELD TESTING

A. Before final acceptance of Work, test each system as in service to demonstrate satisfactory performance.

B. Immediately correct repairs to unacceptable conditions and retest system to confirm repair performance.

3.6 SITE CLEAN UP

A. Clean-up shall be complete and to the satisfaction of the Owner.

B. Restore all interior and exterior surfaces damaged or soiled by the Contractor's work to the Owner's satisfaction.

C. Failure to restore surfacing in a satisfactorily manner will result in the Owner obtaining the service of a specialty contractor to effect satisfactory repairs. All costs incurred by the Owner for restoration Work shall be the sole responsibility of the Contractor.

END OF SECTION

RFI 1 Response

Powell, Patricia "Pepper"

From: Bob Kuykendall <denaligp@ix.netcom.com>
Sent: Thursday, April 16, 2015 9:17 AM
To: Reyes, Paula; Powell, Patricia "Pepper"
Subject: RE: CSM Colonnades and D.O. deck waterproofing projects 50%DD comments
Attachments: 1102-204556.pdf

Paula and Pepper:

Please find attached the laboratory results from samples collected to address the questions you raised below. The lab results indicate the following answers:

1. Does the metal edging on the top of the clear story, picture attached, have asbestos in the caulking? **Yes- the clerestory roof metal flashing with silver paint and caulk contained 5% chryrsotile asbestos and 3 % chrysotile asbestos respectively and needs to be abated as part of the CSM B1 roof replacement project**.

2. Is there asbestos in the brushed on sealant on the roof top mechanical units and ducting? **No - the gray color sealant brushed on the joints of the mechanical units and ducting did not have asbestos present.**

A copy of the laboratory report is attached.

Sincerely,
Bob Kuykendall

Bob Kuykendall
Principal
The Denali Group
2255 Morello Avenue, Suite 208
Pleasant Hill, California 94523
Office: 925-602-2333
Mobile: 925-570-9957

Visit Denali's website at : http://www.thedenaligroup.com

From: Reyes, Paula [mailto:reyesp@smccd.edu]
Sent: Tuesday, April 14, 2015 2:27 PM
To: Bob Kuykendall; Powell, Patricia "Pepper"
Subject: RE: CSM Colonnades and D.O. deck waterproofing projects 50%DD comments

Bob,
Thank you for the proposal.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1102
Bob Kuykendall
The Denali Group
2255 Morello Avenue, Suite 208
Pleasant Hill, CA 94523

PROJECT:
BUILDING 1 - ROOF CSM
SAN MATEO, CA

Micro Log In **204556**
Total Samples 2
Date Sampled 04/15/2015
Date Received 04/15/2015
Date Analyzed 04/15/2015

SAMPLE IDENTIFICATION	ASBESTOS INFORMATION QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES	DOMINANT OTHER MATERIALS
Client #: **DG-1** Micro #: 204556-01 Analyst: GR **BL - CLERESTORY ROOF METAL FLASHING - SILVER PAINT AND CAULK**	**SILVER PAINT: 5% CHRYSOTILE ASBESTOS** **CAULKING: 3% CHRYSOTILE ASBESTOS**	NFM: OTHER, MISCELLANEOUS
Client #: **DG-2** Micro #: 204556-02 Analyst: GR **B-1 DUCT GRAY COLOR SEALANT BRUSHED ON JOINTS**	**NONE DETECTED**	NFM: CARBONATE, MISC. PARTICLES

Technical Supervisor: Gamini Ranatunga, Ph.D. 4/15/2015 Date Reported

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 μm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for any reported materials other than asbestos. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in all layers of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Samples that were reanalyzed are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. NFM = Non-fibrous materials.

Client ID #

p 1 of 1

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(510) 653-0824 - FAX (510) 653-1361 - www.labmicro.com

Log in # 204556

Chain of Custody 09/05/2014

Name / Client / Address:

Bob Kuykendall
Denzl Group
2255 Marella Ave, Suite 208
Pleasant Hill, CA 94523

Job No. Bldg. 1 - Roof
CSM
San Mateo, CA

Tel. 925-602-2333

E-mail denaligp@ix.netcom.com

RUSH!

Asbestos (TEM) AHERA Yamate II Mod. NIOSH 7402 CARB

Asbestos / Fibers PCM (PLM) PLM-400 PLM-1200

Asbestos Soil/Rock PLM CARB 435 400 pts. CARB 435 (Mod.) 1200 pts.

Lead Air Paint Soil Wipe Water Bulk (TTLC) STLC TCLP

Mold / Fungi Air (Spore Trap) Tape Lift Bulk Andersen Swab

Coliform Presence / Absence MTF Sample Temperature (°C)

Other Analyses (Specify)

Number of Samples 2 **Turn-Around Time** Rush

Micro ID # (For Lab Use Only)	Client Sample ID#	Description	Date Sampled	Time Sampled Start / Stop / Total Minutes	Average LPM	Total Liters	Wipe / Swab Sample Area
1	DG-1	B-1 clerestory roof metal flashing - silver paint & caulk	4/15/15	: :			
2	DG-2	B-1 Duct gray color sealant - brushed on joints		: :			
				: :			
				: :			
				: :			
				: :			
				: :			
				: :			
				: :			
				: :			

Instructions / Comments: ☒ E-mail To: denaligp@ix.netcom.com

Sample Return: YES (NO) If "YES" is checked, samples will be returned to the client or archived at Micro Analytical if required. If "NO" is checked, solid samples may be disposed of within three months (one week for liquid samples, lab suspensions, and digestates).

Note to Lab: If any samples are not acceptable, record reasons for rejection.

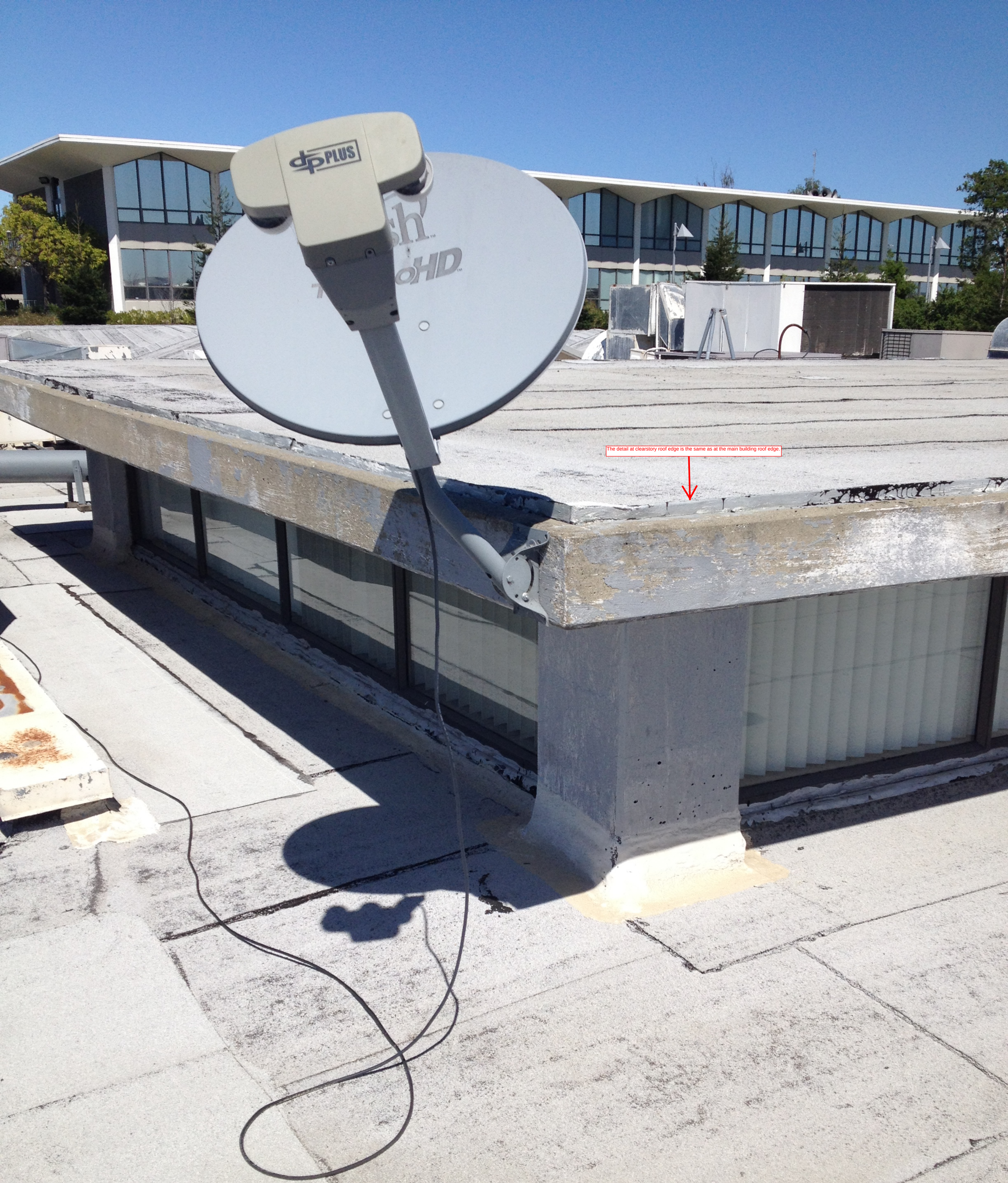
Sampler's Signature / Name RObKuykendall 4/15/15

Relinquished By Drop Box / Courier Date / Time

Received By Karen 4.15.15 Date / Time 1:29

Relinquished By Date / Time

Received By Date / Time


dp PLUS
The detail at clearstory roof edge is the same as at the main building roof edge.


Brushed-on silver duct adhesive tested
Weathermaster