

INVITATION FOR BIDS



FOR CONSTRUCTING

MAYACAMAS PUMP STATION ROOF REPLACEMENT

CONTRACT NUMBER

C02273

ISSUED BY

CAPITAL PROJECTS ENGINEERING DIVISION

CITY OF SANTA ROSA, CALIFORNIA

2020

ATTENTION
Prebid Conference
See Page 1



STATE OF CALIFORNIA

INVITATION FOR BIDS

CONTAINING:

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SPECIAL PROVISIONS

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CONTRACT

FOR

**MAYACAMAS PUMP STATION
ROOF REPLACEMENT**

Contract No. C02273

MAYACAMAS PUMP STATION ROOF REPLACEMENT

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CITY OF SANTA ROSA
STATE OF CALIFORNIA

NOTICE TO BIDDERS

| | |
|---|--|
| ➤ | For technical questions regarding this project, contact Adam Rausch at (707) 543-3859. |
| ➤ | For direct access to plans, specifications and planholders' lists, go to www.srcity.org/bids and click on <u>Bid/Proposal Opportunities</u> . |
| ➤ | For direct access to bid results, go to www.srcity.org/bids . Under Link to Capital Projects, click on <u>Capital Projects Contracts</u> . |

- IMPORTANT -
REVISED BIDDING PROCEDURES DURING SHELTER IN PLACE ORDER

Pursuant to Order No. C19-09, the Sonoma County Public Health Officer has extended the Shelter in Place Order, which will continue until it is extended, rescinded, superseded, or amended in writing by the Health Officer or the State Health Officer. City facilities are currently closed to the public and construction meetings will be held by teleconference calls.

All bids shall be submitted and opened according to the following procedure:

Bid Acceptance Deadline

Sealed bids will be accepted at the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California 95401 until 2:00 p.m., October 1, 2020, for Mayacamas Pump Station Roof Replacement, Contract No. C02273. (Engineer's Estimate: \$225,000).

Bids tendered after this deadline will not be accepted. The official time clock for accepting bids will be an electric date and time stamping clock, located in the Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, California. In order to be accepted, bids must be received prior to 2:00 p.m. Therefore, a bid stamped in at 1:59 p.m. will be accepted, but one delivered at or after 2:00 p.m. is late and will not be accepted.

- A. If you choose to mail your Bid Proposal via any of the overnight/express services, such as FedEx, UPS and USPS, the delivery **MUST** be a timed delivery. The delivery service **MUST** deliver the bid prior to the deadline time posted above. The outside envelope **MUST** be clearly marked as follows: [SEALED BID FOR: C02273 Mayacamas Pump Station Roof Replacement].
- B. If you choose to deliver your Bid Proposal in person, the TIME TO DELIVER BIDS is within the one-hour WINDOW FOR DELIVERY prior to deadline posted above. No bids will be accepted outside of this time window.

Bid Opening Teleconference Call

Prospective bidders, subcontractors, and materials suppliers are invited to attend the Bid opening teleconference call scheduled to be held at 2:00 p.m., October 1, 2020. The teleconference can be accessed by dialing 1 (707) 543-4700, participant code 292-2994#.

Project Description/Scope of Work

Geysers staff have identified leakage from live roof at Mayacamas Pump Station. The roof was also damaged in the Kincade fire. This project will replace the living roof with a new single-ply roof and replace a leaking louver.

Mandatory Pre-Bid Meeting

Prospective bidders are required to attend either of two mandatory pre-bid meetings, to be held at **10:00 a.m., September 22, 2020** and **10:00 a.m., September 24, 2020**. The location for these meetings is 8100 Pine Flat Road, Healdsburg, CA. The entrance is at the corner of Pine Flat Road and McDonald Road.

Subcontractor Information; Department of Industrial Relations Registration

Bidders shall provide the names, business addresses and license numbers of all subcontractors listed on bidder's List of Subcontractors. No contractor or subcontractor may be listed on a bid for this public works project unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

Contract #: C02273

Project Title: MAYACAMAS PUMP STATION ROOF REPLACEMENT

| Line # | Description | Units | Quantity |
|--------|-----------------------------|-------|----------|
| 1 | Roof and Louver Replacement | LS | 1 |

The foregoing quantities are approximate only, being given as a basis for the comparison of bids, and the City of Santa Rosa does not expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, as may be deemed necessary or expedient by the Engineer.

Bids shall be made in accordance with the prevailing hourly rate of per diem wages for this locality and project as determined by the Director of the DIR pursuant to Labor Code sections 1770 *et seq.*

Contractor shall be responsible for compliance with the Immigration Reform Control Act of 1986.

If the project requires the employment of workers in any apprenticeable craft or trade, once awarded, Contractor and subcontractors must apply to the Joint Apprenticeship Council unless already covered by local apprentice standards (see Labor Code section 1777.5).

All bids are to be compared on the basis of the Engineer's estimate of the quantities of work to be performed. No bid will be awarded to a contractor who is not licensed in accordance with the provisions of Chapter 9 of Division 3 of the Business and Professions Code. Contractor must hold a Class C39 license for this project.

Project plans, bid and contract forms for C02273 Mayacamas Pump Station Roof Replacement may be obtained through PlanetBids at www.srcity.org/bids. These documents can no longer be obtained at the Transportation and Public Works Department.

No bid will be accepted unless it is made on the contract bid forms furnished by the Transportation and Public Works Department through PlanetBids. The original of the completed bid forms bearing original signatures must be submitted. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at www.srcity.org/bids, downloads documents/attachments, and is added to the prospective bidders list for this project. If there is an addendum, bidders must log into PlanetBids and acknowledge the addendum to be eligible for bidding.

The successful bidder will be required to hold a current City of Santa Rosa business tax certificate issued pursuant to Chapter 6.04 of the Santa Rosa City Code before commencing work on this project. For information regarding the business tax, contact Revenue and Collections at (707) 543-3170.

For any moneys earned by Contractor and withheld by the City of Santa Rosa to ensure the performance of the Contract, Contractor may, at its request and expense, substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Section 22300 of the California Public Contract Code.

The City of Santa Rosa reserves the right to reject any or all bids and the right to waive minor irregularities or informalities in any bid or bonds.



MARK KASRAIE, PE
Supervising Engineer

September 14, 2020

SPECIAL PROVISIONS

General Specifications

CITY OF SANTA ROSA, CALIFORNIA

MAYACAMAS PUMP STATION ROOF REPLACEMENT

1 GENERAL

The work described herein shall be done in accordance with the "Contract Documents," which are the:

1. Special Provisions
2. Project Plans, consisting of 7 sheets entitled Mayacamas Pump Station Roof Replacement, 2020-0018
3. City of Santa Rosa Design and Construction Standards (City Standards)
4. City of Santa Rosa Construction Specifications for Public improvements (City Specifications)
5. State of California Department of Transportation Standard Specifications 2010 (Standard Specifications), and
6. State of California Department of Transportation Standard Plans 2010 (Standard Plans).

In the event of a conflict in any of these documents, the order of precedence shall be determined by Section 5-1.02 of these Special Provisions.

Whenever the Standard Specifications use the terms State of California, Department of Transportation, Director, Engineer, or Laboratory, the following terms shall be substituted therefor, and any reference to any of the foregoing terms shall be understood and interpreted to mean and refer to such substituted terms as follows:

For State of California - the City of Santa Rosa;

For Department - the City of Santa Rosa Department of Transportation and Public Works or the City of Santa Rosa Water Department;

For Director - the City Engineer of the City of Santa Rosa;

For Engineer - the City Engineer of the City of Santa Rosa or the City Engineer's authorized agents;

For Laboratory – Materials Engineering of the City of Santa Rosa Transportation and Public Works Department, or such other laboratory as may be authorized by the City.

Unless otherwise provided, whenever in these Special Provisions attention is directed to specific provisions in the Standard Specifications, such direction shall not be interpreted as excluding other applicable provisions of the Standard Specifications.

Unless otherwise provided, when sections and subsections of the Standard Specifications are used in these Special Provisions, such use is not exclusive and shall not be interpreted as excluding other applicable provisions of said sections and subsections but is only intended to add to or modify such sections or subsections.

Unless otherwise provided, full compensation for compliance with these Special Provisions is included in the contract price and no additional allowance will be made to Contractor therefor.

The Standard Specifications are hereby modified to delete any reference or incorporation of provisions providing for or requiring arbitration of any and all claims and disputes arising under this contract.

2 BIDDING

2-1.06 Bid Documents: Prospective bidders will be furnished with an Invitation for Bids which will state the location and description of the contemplated public works project and will show the approximate estimate of the various quantities and kinds of work to be performed and materials to be furnished with a schedule of items for which unit prices are requested.

2-1.07 Approximate Estimate: The quantities given in the Contract Documents are approximate only, being given as a basis for the comparison of bids, and the City does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or part of the work or to omit parts of the work, as may be deemed necessary or advisable by the Engineer.

2-1.31 Examination of Project Plans, Specifications, City Standards, Invitation for Bids and Work Site: Prior to submitting a bid, the bidder shall carefully examine the Project Plans, Invitation for Bids, City Standards and the proposed work site. If any person contemplating submitting a bid for this public works project is in doubt as to the meaning of any part of the Contract Documents, or finds discrepancies in or omissions from the Contract Documents, he or she may submit a written request for interpretation or correction to the Engineer. The written request must be received by the Engineer a minimum of 96 hours prior to bid opening. Any interpretation or correction of the Contract Documents prior to bid opening will be made only by written addendum issued by the City. A copy of such addendum will be mailed or faxed to each Planholder. The City will not be bound by any other explanations or interpretations of the Contract Documents.

2-1.33 Bid Document Completion: Any references to Opt Out of Payment Adjustments for Price Index Fluctuations in the Standard Specifications are deleted in their entirety.

2-1.33A Bid Forms: All bids shall be made on bid forms obtained from PlanetBids at www.srcity.org/bids. The bidder shall submit its bid on the original bid forms furnished by the City. Bids submitted on forms other than the forms furnished to the bidder by the City will not be considered.

The bid forms to be submitted at the time of and with the bid are:

1. Unit Price Schedule
2. List of Subcontractors
3. List of Previous Similar Jobs
4. Noncollusion Declaration
5. Bid Guaranty Information and Bidder's Information and Signature
6. Bid Guaranty (Bid Bond or alternate security)

All bids shall give the proposed prices and must bear the original signature of the bidder. Bidders shall fill in all blanks on the bid forms where required. A bid will not be accepted unless the bidder registers as a vendor through PlanetBids at www.srcity.org/bids, downloads documents/attachments, and is added to the prospective bidders list for this project. If there is an addendum, bidders must log into PlanetBids and acknowledge the addendum to be eligible for bidding.

2-1.33B Registration with DIR: No contractor or subcontractor may be listed on a bid for this public works project unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. No contractor or subcontractor may be awarded a contract for this public works project unless registered with the DIR pursuant to Labor Code section 1725.5. This public works project is subject to compliance monitoring and enforcement by the DIR.

2-1.33C Subcontractors: The Subletting and Subcontracting Fair Practices Act, Public Contract Code sections 4100-4113, inclusive (the "Act") shall apply to all subcontracts in excess of one-half of one percent of the total amount of a bid. The Act requires subcontractors, if used for such work, to be listed in the contractor's bid and prohibits the substitution of subcontractors, except as authorized by the Act. Each bidder shall, with respect to the work of any subcontractor in excess of one-half of one percent of the total amount of the bid, include as part of the bid on the bid form provided:

1. The name, business address and DIR registration number of each subcontractor who will perform work or labor or render services to the Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Project Plans or other Contract Documents in an amount in excess of one-half of one percent of the Contractor's total bid; and
2. The portion of the work that will be done by each subcontractor. Only one subcontractor shall be listed for each portion.

The purchase of sand, gravel, crushed rock, batched concrete, aggregate, ready-mixed concrete, and/or any other materials produced and furnished by established and recognized commercial plants, together with the delivery of such materials to the work site by the source of the materials or by recognized commercial hauling companies, is not considered as subcontracting under this section.

2-1.33E Rejection of Bids Containing Alterations, Erasures or Irregularities: Bids may be rejected if they show any alterations of forms, additions not called for, conditional bids, incomplete bids, erasures or irregularities of any kind.

2-1.34 Bid Guaranty: All bids shall be presented under sealed cover and shall be accompanied by cash, cashier's or certified check, or by a bidder's bond made payable to the City of Santa Rosa and executed as surety by a corporate surety authorized and admitted to transact a surety business in the State of California in an amount equal to ten percent of the amount of the bid. No bid shall be considered unless such cash, cashiers or certified check, or bidder's bond is enclosed with the bid. Any bidder's bond shall contain provisions for forfeiture consistent with California Public Contract Code section 20172.

2-1.40 Withdrawal of Bid: A bid may be withdrawn prior to, but not after, the hour fixed in the public notice for the opening of bids, provided that a written request to withdraw the bid, executed by the bidder or the bidder's authorized representative, is filed with the Engineer before this deadline. The withdrawal of a bid shall not prejudice the right of a bidder to submit a new bid.

2-1.43 Public Opening of Bids: Bids will be opened and read publicly at the time and place indicated in the Notice to Bidders. Bidders or their authorized agents are invited to be present.

2-1.46 Disqualification of Bidders: Serial bids from the same bidder will not be accepted. This section shall not be interpreted to mean that the same contractor may not be the contractor in one bid and listed as a subcontractor in another bid, provided that no collusion exists.

2-1.48 Competency of Bidders: No bid will be accepted from or contract awarded to a contractor that is not licensed in accordance with the law, that does not hold a license qualifying it to perform work under this contract, to whom a bid form has not been issued by the Engineer, or that has not successfully completed projects of similar character, scope and cost to the proposed project. Bidders will be required to provide a list of previous similar jobs with their bids.

3 CONTRACT AWARD AND EXECUTION

3-1.04 Contract Award: The City reserves the right to reject any or all bids. Bids are required for the entire work described herein. All bids will be compared with the Engineer's estimate of the quantities of work to be completed. Contract award, if any, will be made to the lowest responsible bidder within sixty days from the date bids are opened.

3-1.05 Contract Bonds: Within ten days after receipt of the Notice of Award, the successful bidder shall provide the following bonds to the City:

- a. Performance Bond: A performance bond to guarantee the faithful performance of the terms and conditions of the Contract by Contractor, which shall be executed in a sum of not less than one-half of the Contract price;
- b. Labor and Materials Bond: A labor and materials bond (payment bond) in accordance with Part 6 of Division 4, sections 8000 *et seq.* of the California Civil Code, to guarantee against any and all claims of subcontractors or other third parties furnishing labor, materials, or supplies for the Contract, which shall be executed in a sum of 100% of the Contract price; and
- c. Material Guaranty Bond: A material guaranty bond (warranty bond) to serve as surety for the guarantee requirements outlined in Section 6-3.01B, which shall be executed in a sum of not less than one-half of the Contract price.

The bond(s) shall be provided in a form acceptable to the City and issued by a corporate surety in good financial standing and authorized and admitted to transact a surety business in the state of California for the purposes and in the amount(s) stated above.

Whenever the financial or legal status of any surety on any such bond(s) is/are unacceptable to the City, it may make a demand to Contractor for further bond(s) or additional surety, not exceeding the sums originally required. Thereafter, no payment shall be made upon the Contract to Contractor or any assignees of Contractor until such bond(s) or additional surety has/have been provided to the City.

3-1.07 Indemnification and Insurance: Indemnification: Contractor shall defend, hold harmless and indemnify City, its officers, agents and employees, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, including, but not limited to, any fees and/or costs reasonably incurred by City's staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as "Liabilities"), including but not limited to Liabilities arising from personal injury or death; damage to personal, real or intellectual property or the environment; contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with the performance of or the failure to perform the Contract by Contractor, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not such Liabilities are caused in part by a party indemnified hereunder, or such Liabilities are litigated, settled or reduced to judgment; provided, that the foregoing indemnity does not apply to liability for any damage or expense for death or bodily injury to persons or damage to property to the extent arising from (i) the sole negligence, or willful misconduct of, or defects in design furnished by City, its agents, servants, or independent contractors who are directly responsible to City (excluding Contractor), or (ii) the active negligence of City.

The existence of any of the insurance policies or coverages described in this Contract shall not affect or limit any of City's rights hereunder, nor shall the limits of such insurance limit Contractor's liability to the City hereunder. The provisions of this section shall survive any expiration or termination of the Contract.

Insurance: Contractor shall maintain in full force and effect all of the insurance coverage described in and in accordance with the insurance requirements set forth below. Maintenance of such insurance coverage during the entire performance of the Contract is a material element of the Contract. Failure by Contractor to (i) maintain or renew coverage, (ii) provide notice of any changes, modifications, or reductions in coverage, or (iii) provide evidence of renewal, if necessary, may be deemed a material breach of the Contract by Contractor, whereas the City shall be entitled to all rights and remedies at law or in equity. Notwithstanding the foregoing, any failure by Contractor to maintain required insurance coverage shall not excuse or alleviate Contractor from any of its other duties or obligations under the Contract. In the event Contractor retains or utilizes any subcontractors or sub-consultants in performance of the work, Contractor shall assure that any such subcontractor has first obtained, and shall maintain, all of the insurance coverage requirements herein set forth below.

Insurance Requirements:

A. Insurance Policies: Contractor shall maintain and keep in full force and effect, the following policies of insurance with minimum coverage as indicated below and issued by insurers with an AM Best rating of no less than A:VI or a rating otherwise acceptable to the City.

| Insurance | Minimum Coverage Limits | Additional Coverage Requirements |
|---|--|--|
| 1. Commercial general liability | \$5 million per occurrence \$5 million aggregate | Coverage must be at least as broad as ISO CG 00 01 and must include products liability and completed operations coverage which shall continue for a period of three years after acceptance of the work by the City. If insurance applies separately to a project/location, aggregate may be equal to per occurrence amount. Coverage may be met by a combination of primary and umbrella or excess insurance, but umbrella and excess shall provide coverage at least as broad as specified for underlying coverage. Completed Operations Coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 37 04 13. See endorsements below for other Additional Insured Requirements. Coverage shall not exclude subsidence. |
| 2. Business auto coverage | \$3 million | Coverage at least as broad as ISO Form Number CA 00 01 covering any auto (Code 1). Insurance shall cover owned, non-owned and hired autos. |
| 3. Workers' compensation and Employer's Liability | \$1 million | As required by the State of California, with Statutory Limits and Employer's Liability Insurance with limit of no less than \$1 million per accident for bodily injury or disease. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by Contractor, its employees, agents and subcontractors. |
| 4. Course of construction/builders' risk | Amount of completed value of project without co-insurance provisions | Required for construction projects over \$3 million. The City shall be named as loss payee. |

B. Endorsements:

1. All policies shall provide or be endorsed to provide that coverage shall not be canceled by either party, except after prior written notice has been provided to the City in accordance with the policy provisions.
2. Liability policies shall provide or be endorsed to provide the following:
 - a. For any claims related to this Contract, Contractor's insurance coverage shall be primary, and any insurance or self-insurance maintained by City shall be in excess of Contractor's insurance and shall not contribute with it. Endorsements at least as broad as 20 01 04 13 or evidence of policy language will be required in non-ISO CGL policies.
 - b. **The City of Santa Rosa, its officers, agents and employees are to be covered as additional insureds on the CGL policy.** Additional Insured Endorsements at least as broad as 20 10 04 13 or 20 38 04 13 are required.

C. Verification of Coverage and Certificates of Insurance: Contractor shall furnish City with original certificates and endorsements effecting coverage required above. Certificates and endorsements shall make reference to policy numbers. All certificates and endorsements are to be received and approved by the City before work commences and must be in effect for the duration of the Contract. The City reserves the right to require complete copies of all required policies and endorsements during the duration of the Contract and for a period of three years following City's acceptance of the work.

D. Other Insurance Provisions:

1. No policy required by this Contract shall prohibit Contractor from waiving any right of recovery prior to loss. Contractor hereby waives such right with regard to the indemnitees.
2. All insurance coverage amounts provided by Contractor and available or applicable to this Contract are intended to apply to the full extent of the policies. Nothing contained in this Contract limits the application of such insurance coverage. Coverage for an additional insured shall NOT be limited to the insured's vicarious liability. Defense costs must be paid in addition to coverage amounts.
3. Self-insured retentions above \$10,000 must be approved by the City. At the City's option, Contractor may be required to provide financial guarantees.
4. City reserves the right to modify these insurance requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

3-1.18 Contract Execution: The fully executed Contract, original bonds and insurance certificates and endorsements required under the Contract shall be delivered to the City within ten calendar days of Contractor's receipt of the Notice of Award.

The Engineer will supply Contractor with up to ten sets of the Invitation for Bids and Project Plans. At least one complete set of the Invitation for Bids and Project Plans shall be kept at the construction site in good condition and made available to the Engineer at all times. Additional copies of the Invitation for Bids and Project Plans will be provided by the Engineer at Contractor's cost.

3-1.20 Failure to Execute Contract: Contractor's failure to deliver to the City the fully executed Contract within ten calendar days of Contractor's receipt of the Notice of Award shall be cause for the cancellation of the award and the forfeiture of the bid guaranty to the City. If the successful bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest responsible bidder. If the second lowest responsible bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible bidder. The refusal or failure by the second or third lowest responsible bidder to deliver to the City the fully executed

Contract within ten calendar days of receipt of the Notice of Award to the respective bidder shall likewise be cause for the cancellation of the award and the forfeiture of the bid guaranty of the respective bidder. In its discretion, the City may then re-advertise the project or construct it by day labor.

3-1.21 Return of Bid Guarantees: Within ten days after the opening of bids, the City will return the bid guarantees to all bidders except the three lowest responsible bidders. The bid guarantees of the three lowest responsible bidders will be retained until the Contract has been fully executed. In the event all bids are rejected, all bid guarantees will be returned to the respective bidders.

3-1.22 Subcontractors: The successful bidder shall furnish a list of all subcontractors as required under Sections 2-1.33C. The list shall include the name, business address, DIR registration number and the state contractor's license number of each subcontractor on the list and the names of the responsible managing employees whose names appear on the subcontractors' licenses.

4 SCOPE OF WORK

4-1.05 Changes and Extra Work: All changes to the Contract shall be made by written change order only.

All extra work shall be recorded by Contractor on a daily report signed by both the City and Contractor. The “daily reports” shall thereafter be considered the true record of extra work performed. A copy of the daily reports will be furnished to Contractor. Contractor is directed to Section 9-1.04 of this Invitation for Bids.

4-1.05C Compensation for Altered Quantities: Payment and compensation for altered quantities shall conform to the provisions of Section 9-1.06 of the Standard Specifications, except as modified herein.

5 CONTROL OF WORK

5-1.02 Contractor's Copies of Contract Documents: In the event of a conflict in any of the Contract Documents, the order of precedence from highest to lowest shall be as follows:

1. Special Provisions
2. Project Plans, consisting of 7 sheets entitled Mayacamas Pump Station Roof Replacement, 2020-0018
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

5-1.05 Order of Work: The work as shown on the Project Plans and as specified in the Invitation for Bids shall be constructed in a sequence that is satisfactory to and approved by the Engineer.

Contractor shall prepare a work schedule per Section 8-1.02 of the Standard Specifications.

With the exception of trenching, all existing street, street light base, curb and gutter, storm drain, water line, and sewer line work shall be completed before any existing street paving is removed.

Full compensation for the conformance to the requirements of this section is included in the Contract price and no additional allowance will be made to Contractor for this work.

5-1.17 Character of Workers: Contractor is directed to Section 5-1.17 of the Standard Specifications which states:

"If any subcontractor or person employed by the Contractor shall appear to the Engineer to be incompetent or to act in a disorderly or improper manner, he shall be discharged immediately on the request of the Engineer, and such person shall not again be employed on the work."

No additional compensation shall be granted to Contractor in the event City exercises any part of its rights under this section and any and all costs related to such exercise shall be borne by Contractor.

5-1.20 Cooperation with Other Entities: Attention is directed to Section 5-1.20 of the Standard Specifications.

Other construction including but not limited to utility, power, and pipe line relocation, may be in progress by other forces within and adjacent to the project area at the same time work is being performed under this Contract by Contractor.

Contractor shall cooperate with the forces performing other work, to the end that such forces may conduct their operations with as little inconvenience and delay as possible. Contractor shall grant such forces access to the project area as is reasonable and necessary to transport materials and equipment to the site of operations by the other forces.

5-1.20B(4)(a) Offsite Staging Areas and Construction Yards: Attention is directed to Santa Rosa City Code section 20-52.040, Temporary Use Permit.

A Temporary Use Permit shall be obtained for any offsite construction yard on private property to be used for any of the following:

- a. Stockpiling of equipment and/or materials;
- b. Staging of construction;

- c. Placement of work trailers or mobile offices;
- d. Storage of trench spoils; or
- e. Other construction related activities not specifically enumerated above.

5-1.26 Lines and Grades: Contractor shall carefully preserve all bench marks, grade stakes, and all other survey markers. In the case of willful or careless destruction, Contractor shall bear the cost of replacing the markers.

Contractor shall contact the Engineer directly for coordination of survey staking. Written staking requests must be submitted at least two working days in advance of the date and time stakes are needed.

5-1.27B Examination and Audit: Pursuant to California Government Code section 8546.7, any contract with the City involving expenditures in excess of \$10,000 shall be subject to the examination and audit of the California State Auditor for a period of three years after final payment is made to Contractor by City under this Contract. Any such examination and audit will be confined to those matters connected with the performance of this Contract.

5-1.30A Inspection: Contractor shall bear all costs associated with the re-inspection of any defective, rejected or unauthorized work as determined by the Engineer in Engineer's sole discretion. Such costs of re-inspection, including any costs incurred by the City for additional staff time or fees for third-party consultant inspectors, will be deducted from one or more progress payments hereunder.

5-1.36A Property and Facility Preservation: Attention is directed to Section 5-1.36 of the Standard Specifications.

At Contractor's sole expense, all fences, gates, landscaping, drainage ditches, sidewalks, irrigation systems, and any other improvements that are damaged, removed or destroyed because of Contractor's operations, shall be replaced in accordance with City Standards at a minimum and restored to the same or better condition. Concrete surface treatment and score marks shall match adjacent existing concrete improvements.

5-1.36E Obstructions: Attention is directed to Section 5-1.36 of the Standard Specifications and to the possible existence of underground gas mains, high voltage lines, telephone ducts, storm drains and water and sewers systems, the locations of which are not shown on the Project Plans. The determination of the location of these facilities and the cost of repair or replacement in the event of damage to such facilities are the sole responsibility of Contractor.

Should Contractor alter any public utility or private improvements to facilitate its operations or for its sole benefit, which alteration would not be otherwise required, Contractor shall make whatever arrangements are necessary with the owner or controlling authorities and shall bear all expenses in connection therewith. Any damages to any public utility or private improvement caused by Contractor shall be repaired by Contractor at its sole expense and to the full satisfaction of the Engineer or the controlling authority.

Any subsurface information and data furnished under any part of this Contract are not intended as a representation or warranty but are furnished for information only. It is expressly understood that the City will not be responsible for the accuracy thereof or for any deduction, interpretation or conclusion drawn therefrom by Contractor. The information is made available so that Contractor may have ready access to the same information available to the City and is not part of this Contract.

PRIOR TO STARTING ANY EXCAVATION, CONTRACTOR SHALL (AT LEAST TWO WORKING DAYS IN ADVANCE) CALL UNDERGROUND SERVICE ALERT (USA) toll free at (800) 227-2600 and provide USA with all necessary data relative to the proposed excavation. USA will accept calls

and process information to participating agencies who have underground facilities in the area between the hours of 7:30 a.m. and 5:00 p.m. daily, except Saturdays, Sundays, and holidays. Between the hours of 5:00 p.m. and 7:30 a.m., calls will be recorded and then processed after 7:30 a.m. For emergency situations, after hours, and on Saturdays, Sundays and holidays, Contractor shall contact the owner of the affected facility.

Contractor shall coordinate all work with the appropriate City field personnel. When City work forces are required at the job site to perform Contract items of work, Contractor shall give a minimum of two working days advanced notification to the appropriate field office:

| | |
|------------------|----------------|
| Water Division: | (707) 543-4200 |
| Sewer Division: | (707) 543-4200 |
| Street Division: | (707) 543-3880 |
| Survey Division: | (707) 543-3834 |

5-1.43 Potential Claims and Dispute Resolution: "Claim" means a separate demand by Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following: (A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by the City under the Contract; (B) Payment by the City of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled; or (C) Payment of an amount that is disputed by the City.

Upon receipt of a Claim, the City shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed, provided, the parties may extend the 45 day time period by mutual agreement.

If the City needs approval from the City Council to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the Claim, and the Council does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a Claim, the City shall have up to three days following the next duly publicly noticed meeting of the City Council after the 45-day period, or extension expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the City issues its written statement. If the City fails to issue a written statement, the Claim shall be deemed rejected in its entirety.

If a Contractor disputes the City's written response, or if the City fails to respond to a Claim within the time prescribed, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the City shall conduct a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the City shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the City issues its written statement. Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the City and the Contractor sharing the associated costs equally. The City and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

6 CONTROL OF MATERIALS

6-2.01 Source of Supply and Quality of Materials: All materials required to complete the work under the Contract shall be furnished by Contractor and shall be free of hazardous substances.

6-3.01 General: Statistical means will not be used by the City for determination of Standard Specification compliance. Whenever both operating range test results and Contract compliance requirements are specified in these special provisions, the operating range requirements shall apply to the individual test results.

6-3.01A Material Submittals: Upon award of the Contract by City, Contractor shall submit to the Engineer a list of all materials proposed to be used on this project and any supporting documentation and/or samples required and source of supply.

For material listed on the "Engineer's List of Approved Items" which is located in the Sewer and Water sections only of the City Standards, the Engineer shall be provided with the name of the manufacturer and model/part number for all material proposed for this project, unless that item has been replaced as shown on the Project Plans or in the Invitation for Bids.

For all other materials used on this project, regardless of the type of work, Contractor shall provide to the Engineer the name of the manufacturer and model/part number along with supporting documentation and/or samples that will allow the Engineer to determine the material's acceptability.

The Engineer reserves the right to reject any proposed material, whether on the City's "Engineer's List of Approved Items" or not. If the City obtains information indicating that a listed item is not performing satisfactorily or is found to be defective, that item will be rejected and Contractor shall submit a replacement for review at no additional cost to the City.

6-3.01B Material Guarantee: Before any contract is awarded, the bidder may be required to furnish samples of materials and detailed descriptions of equipment to be used in the construction of the project. The materials samples may be subjected to the tests provided for in the Standard Specifications or in this Invitation for Bids to determine their quality and fitness for the project. The successful bidder shall unconditionally guarantee project materials and workmanship for a period of one year from the date of recording of the Notice of Completion. The guarantee shall cover 100% of all costs of repairs within the one year period, including all costs of labor, materials, equipment, and incidentals. Except as may be otherwise provided in Section 3-1.05, the successful bidder shall provide a surety bond executed by a corporate surety authorized and admitted to transact a surety business in the state of California in the minimum amount of one-half of the Contract price to cover this guarantee.

6-3.05 Quality Assurance: California Test 216 (Relative Compaction) testing will be modified as follows: A mechanical compactor (Ploog Engineering Co. Model M 100 or equivalent) with 10-pound hammer and split compaction molds shall be used in lieu of the specified manual compaction equipment.

California Test 231 (Nuclear Gage Determination of In-Place Density) will be modified as follows: In-place density and relative compaction may be determined on the basis of individual test sites in lieu of the area concept, at the discretion of the Engineer.

6-4 Water Utility

6-4.01A Construction Water: All water required for the performance of the work shall be provided by Contractor. Prior to obtaining water from the City's water system, Contractor shall obtain a Water Use Permit from the City of Santa Rosa Water Department and rent a hydrant or bridge meter. Contractor is responsible for the cost of all water and the cost of all deposits, permits and fees.

Contractor is prohibited from operating gate valves or fire hydrants on the City system.

The acquisition of water from the City's water system through un-metered hydrants or other facilities is a violation of City ordinance and State law. The use of water from sources other than the City's water system must be approved by the Engineer in advance of the use.

Citations and fines will be levied for violation of these and other utility regulations and deductions will be made from payments consistent with Section 7-1.02A(1) of the Standard Specifications.

6-4.01B Water Utility Notification: Contractors or parties requiring work of any kind by the City of Santa Rosa Water Department forces shall request such services a minimum of 48 hours in advance of the time such services are desired. Work requests which will involve the City of Santa Rosa Water Department forces for more than eight hours or an extensive number of City parts shall be requested a minimum of seven calendar days in advance.

If it is necessary to terminate or disrupt utility service to any customer, Contractor shall make the request for such work by City forces an additional 72 hours (three additional working days for a total of five working days advance notice) in advance of the time such services are desired to allow affected customers a minimum of 72 hours' notice. Contractors who fail to keep field appointments will be billed for scheduled City of Santa Rosa Water Department crew standby time which was used and the Contractor shall bear the costs incurred by the City of Santa Rosa's Water Department for re-notification of customers.

City of Santa Rosa Water Department crews work a 9/80 schedule. This schedule may prohibit shutdowns for tie-ins on alternating Fridays. After hours work or weekend work may be performed if prior authorization from the Engineer is obtained.

Other than the hours specified in this Invitation for Bids, requests by Contractor for after hours or weekend work is to be avoided whenever possible. Any overtime costs incurred by City for such work shall be borne by Contractor.

Interruption of utilities service to commercial customers shall be coordinated with the customer to minimize disruption to the enterprise to the greatest extent practicable. After notification by the Contractor of the need, the City of Santa Rosa Water Department will contact all commercial customers and inform Contractor accordingly.

6-4.01C Water Facility Damage: All damage caused to the City's water system shall be immediately reported to the Engineer.

Damage caused to the City's water system by Contractor's operations shall be repaired by the Contractor at Contractor's sole expense in a manner satisfactory to the City of Santa Rosa Water Department. Such repairs shall not be charged to the City or any City project. All repair work shall be witnessed and approved by the City of Santa Rosa Water Department prior to backfilling the excavation. The City will require re-excavation if backfilling occurs prior to inspection, which costs shall be borne by Contractor.

Contractor is responsible for, at its sole cost and expense, the repair and remediation of damage to property and facilities caused by any of the following circumstances:

- a. Contractor fails to make a written request for a markout or begins excavation without providing the City of Santa Rosa Water Department a reasonable opportunity to mark facilities;
- b. Contractor destroys markouts;
- c. Contractor fails to perform hand digging or probing for utilities near markouts; or
- d. Contractor fails to use reasonable caution, regardless of whether markouts are present or clear. Reasonable caution includes any efforts to avoid damaging existing facilities, such as when excavating in the vicinity of water mains.

City may, in its discretion, opt to make the repairs for which Contractor is responsible with its own forces. In such cases, the repairs will be made at Contractor's expense in accordance with the emergency repair rate schedule of the City of Santa Rosa Water Department. The City may make repairs whenever restoration of service requires extraordinary speed or special equipment. Contractor will be billed accordingly and City shall have the right and option to withhold payment hereunder, or a portion thereof, for any such costs billed but not promptly paid by Contractor.

6-4.02 Salvage: All valves, hydrants, and other appurtenances of the water system that are the property of City and removed by Contractor shall be delivered to the City's Municipal Services Center (55 Stony Point Road) unless Contractor has obtained specific written approval from the City of Santa Rosa Water Department to otherwise dispose of the materials.

6-4.03 Trade Names and Alternatives: Unless otherwise specified, material and equipment specifications that identify a particular patent, trade name or manufacturer, may be satisfied through substitute materials and equipment accepted by the City. Contractor may offer substitute materials and equipment of equal or better quality to the City. Any such offer shall be made in writing to the Engineer at least four weeks in advance of the time Contractor wishes to order the materials or equipment. Contractor shall include sufficient data which, together with any other information the Engineer may require, will enable the Engineer to determine the acceptability of the materials and equipment. When the substitute materials or equipment necessitate changes to any part of the work, the information shall include drawings and details showing all such changes and Contractor shall perform these changes as a part of any acceptance of substitute materials or equipment. The use of substituted materials and equipment will be permitted only after written acceptance of the materials and equipment by the Engineer. Such acceptance shall not relieve the Contractor from full responsibility for the sufficiency, quality and performance of the substitute materials and equipment.

The City will not, under any circumstances, acknowledge or consider any offers to accept substitute materials or equipment between the dates of public notice of advertisement and the bid opening.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7-1.02A(1) Forfeitures for Health and Safety Violations: Contractor shall comply with all applicable provisions of the Santa Rosa City Code and any failure to do so shall constitute a breach of the Contract. In the event of any violation of the Santa Rosa City Code that may impact public health and safety, including, but not limited to Chapter 17-12, "Storm Water" and Chapter 13-04, "Street Encroachments," City shall have the right to impose a charge against Contractor in an amount equal to \$500.00 per violation per day. Prior to the imposition of any charge hereunder, City shall first provide a written notice to Contractor of the violation and setting forth a reasonable period of time for Contractor to cure the violation(s). In the event Contractor fails to cure any such violation within the time provided, City shall have the right, in addition to all other rights and remedies available to City, to deduct and withhold as a permanent forfeiture by Contractor the appropriate amounts from any payment otherwise due Contractor under this Contract.

7-1.02K(2) Wages: Pursuant to Labor Code sections 1770 *et seq.*, each laborer or mechanic of Contractor or any subcontractor engaged in work on the project under this contract shall be paid not less than the hourly wage rate of per diem wages set forth in the prevailing wage rate schedule published by the Director of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any subcontractor and such laborers and mechanics. A copy of the schedule of prevailing wage rates can be obtained online at www.dir.ca.gov or from the Department of Transportation and Public Works at 69 Stony Circle, Santa Rosa.

Any laborer or mechanic employed to perform work on the public works project under this Contract, which work is not covered by any of the foregoing classifications, shall be paid not less than the prevailing wage rate of per diem wages specified herein for the classification which most nearly corresponds to the work to be performed by the worker.

The foregoing specified prevailing wage rates are minimum rates only, and Contractor may pay any wage rate in excess of the applicable rate.

Pursuant to Labor Code Section 1775, Contractor as a penalty to the owner shall forfeit not more than \$200.00 for each calendar day, or a portion thereof, for each worker paid less than the prevailing wage rate established by the Department of Industrial Relations for such work or craft in which such worker is employed. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which the worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

Contractor shall only provide prevailing wage reports upon written request from City. When requested, these prevailing wage reports must be redacted by the Contractor prior to providing them to City.

7-1.02K(4) Apprentices: Contractor agrees to comply with Chapter 1, Part 7, Division 2, sections 1777.5 *et seq.* of the California Labor Code. These sections require contractors and subcontractors to employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice work for each five hours of journeyman work (unless an exception is granted in accordance with Section 1777.5), and the contractors and subcontractors shall not discriminate among otherwise qualified employees as apprentices solely on the ground of sex, race, religion, creed, national origin, ancestry, or color. Only apprentices as defined in Labor Code section 3077, who are in training under apprenticeship standards and who have written apprentice agreements will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeable occupations.

7-1.02K(6)(a)(1) Notice to Vendors: Attention is directed to the current OSHA Standards. All equipment, tools and materials which are furnished and/or installed as part of this Contract shall meet or exceed the aforementioned standards in order to be considered acceptable.

7-1.02K(6)(b) Excavation Safety: When the digging or excavation occurs during project construction, Contractor shall:

- a. Promptly notify City in writing of the following conditions before any such conditions are disturbed:
 1. Material that the Contractor believes may be hazardous waste as defined in Health and Safety Code section 25117 that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law;
 2. Subsurface or latent physical conditions at the site differing from those indicated in the Invitation for Bids; and
 3. Physical conditions at the site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in the type of work under the Contract.
- b. The City will investigate the conditions and will issue a change order under the terms of the Contract if it finds that the conditions warrant it.
- c. If a dispute arises between City and Contractor as to whether a change order is warranted, Contractor shall not be excused from any scheduled completion date provided for in the Contract but shall proceed with all work to be performed under the Contract.

7-1.02K(6)(b)(1) Trench Excavation Safety Plans: When the estimated cost for the excavation of any trench or trenches five feet or more in depth will exceed \$25,000.00, Contractor shall submit to the Engineer in advance of excavation a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the construction safety orders, or if the trench is anticipated to be greater than 20 feet, the plan shall be prepared by a registered civil or structural engineer.

A permit to do the above described work shall be obtained from the State of California, Division of Industrial Safety. Proof of such permit shall be submitted to the Engineer prior to starting the trench work.

Full compensation for complying with the provisions of this section shall be considered as included in the Contract price and no additional allowance will be made for the work.

7-1.02K(6)(d) Confined Space Safety: Any confined space entry for this project, including but not limited to manhole or water storage tank entry, will require a confined space entry permit pursuant to Cal/OSHA regulations as set forth in title 8 California Code of Regulations (CCR) sections 5157 or 5158. Confined space entry shall have the meaning ascribed in title 8 CCR sections 5157 and 5158. For any confined space entry for construction operations regulated by title 8 CCR section 1502, Contractor shall comply with title 8 CCR section 5158, "Other Confined Space Operations." For any other confined space operations, Contractor shall comply with title 8 CCR section 5157, "Permit-Required Confined Spaces."

Attention is directed to the technical specifications in the Special Provisions for information regarding entry to any City maintained confined space. Pursuant to title 8 CCR section 5157, Contractor is required to obtain any available information regarding hazards and operations for any City maintained confined spaces. The City maintained Confined Space Entry Manual is available

for viewing at the City of Santa Rosa Water Department or Transportation and Public Works Department office at 69 Stony Circle, Santa Rosa.

Contractor shall immediately inform the Engineer of any previously unidentified hazards confronted or created during confined space entry.

7-1.02L(2)(a) Patents and Royalties: All fees, royalties, or claims for any patented invention, article, process or method that may be used upon or in any manner connected with the work under this Contract shall be paid by Contractor. Contractor and its sureties shall protect and hold harmless City and its officers, agents, and employees from any and all demands made for such fees royalties or claims brought or made by any third party, and before the final payment is made on the account of the Contract, Contractor shall, if requested by City, furnish acceptable proof of a proper release from all such claims and liabilities.

Should Contractor, its officers, agents, or employees, or any one of them be enjoined from furnishing or using any invention, article, material, or plans supplied or required to be supplied or used under the Contract, Contractor shall promptly substitute other articles, materials, or appliances in lieu thereof of equal efficiency, quality, finish, suitability, and market value, and satisfactory in all respects to the Engineer. In the event that the Engineer elects, in lieu of such substitution, to have supplied and to retain and use any such invention, article, materials, or plans as may be required to be supplied by the Contract, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for City, its officers, agents, and employees, or any one of them to use such invention, article, materials, or appliance without being disturbed or in any way interfered with by any proceeding in law of equity on account thereof. Should Contractor neglect or refuse to make the substitution promptly or to pay such royalties and secure such licenses as may be necessary, then in that event the Engineer shall have the right to make such substitutions or City may pay such royalties and secure such licenses and charge Contractor even though final payment under the Contract may have been made.

7-1.02M(3) Mined Materials: California Public Contract Code section 20676 prohibits surface mining operators which are subject to the Surface Mining and Reclamation Act of 1975 (SMARA) from selling California mined construction material to the City unless the operator is identified in a list referred as the **3098 List**. The List, which is maintained by the Department of Conservation's Office of Mine Reclamation (OMR), changes throughout the year and can be viewed at the OMR website: http://www.consrv.ca.gov/OMR/ab_3098_list/index.htm. To confirm whether or not a specific operator is on the List at any given time, Contractor shall call the OMR at (916)323-9198.

7-1.03A Maintaining Traffic: Attention is directed to Sections 7-1.04 of the Standard Specifications and to the following modifications thereof.

If construction is within City owned right-of-way, provisions shall be made for the safe passage of public traffic through the work site at all times consistent with the requirements of Santa Rosa City Code Chapter 13-04.

Except for projects to be performed under a minor contract, Contractor shall install and maintain project identification signs at each end of the project or as directed by the Engineer two weeks prior to any construction activity. City shall furnish the appropriate sign panels upon request from Contractor. To mount the sign panels, Contractor shall furnish and install 4" X 4" posts or mount by other appropriate methods as approved by the Engineer. These sign panels shall be returned to the City Corporation Yard at 55 Stony Point Road after completion of the project.

Two weeks prior to any construction activity, advance notice signs for road closures shall be furnished and installed by Contractor at each end of the project and shall remain in place throughout the duration of the subject closure. Details of panel construction and lettering shall be approved by the Engineer.

Contractor shall furnish, install, and maintain at its expense all barricades, signs, lights, and other devices necessary to adequately warn of any obstructions to the traveled and pedestrian way and provide flaggers as necessary for the safety of public traffic and pedestrians and to provide access to property adjacent to the work site and Contractor shall comply with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101, *et seq.*) (ADA) and any regulations and guidelines issued pursuant to the ADA.

Contractor shall comply with the current edition of the California Manual of Uniform Traffic Control Devices (CA MUTCD) for all items related to traffic within the work site.

Rain and other occurrences that may cause the suspension or delay of the work shall in no way relieve Contractor of its responsibility to provide traffic control and public access through the work site as specified herein. At all times, Contractor shall keep at the work site such materials, forces and equipment as may be necessary to keep roads, streets, and driveways within the work site open to traffic and in good repair and shall expedite the passage of such traffic, using such forces and equipment as may be necessary.

Should Contractor fail, in the opinion of the Engineer, to provide all the materials, forces and equipment necessary to maintain traffic through the work site as set forth herein, City may take steps necessary to remedy any such failure, including but not limited to causing such work to be performed and/or suspending any further work under the Contract. Any such remedial cost and expense incurred by the City, plus an administrative charge of 15%, shall be immediately due and payable by Contractor and may be deducted from any amounts owed to Contractor hereunder. In the event there are insufficient sums owed to Contractor hereunder to cover the foregoing costs and charges, City shall have the right to pursue any other remedy to recover the same, including but not limited to, proceeding against any surety or bond in favor of City. City's rights under Section 7-1.02 are intended to be in addition to and not in lieu of any charges imposed by City against Contractor under Section 7-1.02A(1) above for violations of the Santa Rosa City Code.

Contractor shall be responsible for informing emergency response agencies operating within the area of the work of obstructions to either public or private roads caused by reason of Contractor's operations hereunder.

Contractor shall make provisions for the safe passage of pedestrians around the project work site at all times.

8 PROSECUTION AND PROGRESS

8-1.01A Assignments: Once awarded, this Contract shall not be transferred, assigned, or sub-contracted, except as herein expressly provided without the prior written consent of the City in the City's sole and absolute discretion. See Section 5-1.12 of the Standard Specifications.

8-1.04B Standard Start: Contractor shall begin work within ten calendar days after the date authorized in the Notice to Proceed and shall diligently prosecute the Contract to completion before the expiration of:

40 WORKING DAYS

Additionally, this work will be performed in a permanent easement that restricts the number of on-site working days. Thus, on-site work cannot exceed 20 working days. Contractor hereby agrees that Contractor shall pay the City \$2,183 for each on-site working day in excess of 20 on-site working days used in prosecution of the Contract.

8-1.05 Time: Working days will be counted beginning with the day the Contractor begins work or with the tenth day after the date authorized in the Notice to Proceed, whichever occurs first.

Unless otherwise directed by Engineer, Contractor shall not conduct any activities that generate noise earlier than 7:00 a.m. or later than 6:00 p.m.

8-1.10 Liquidated Damages: Contractor hereby agrees that Contractor shall pay to the City liquidated damages for each and every calendar day delay over and above 40 working days prescribed above for finishing the work in the amount shown in Section 8-1.10 of the Standard Specifications.

9 MEASUREMENT AND PAYMENT

9-1.04 Force Account Work: All work done on a force account basis shall be recorded daily on report sheets prepared by Contractor and signed by both the Engineer and Contractor. Such reports shall thereafter be considered the true record of force account work performed during the project. Such reports shall be furnished to the Engineer and a copy retained by Contractor.

All extensions of labor, equipment, and material costs shall be completed by Contractor and submitted to the Engineer within 30 days of the completion of the extra work. Completed and extended extra work reports received later than the times herein prescribed may be deemed invalid and rejected without payment at the discretion of the Engineer.

9-1.07 Payment Adjustments For Price Index Fluctuations: Any references to Opt Out of Payment Adjustments for Price Index Fluctuations in the Standard Specifications are deleted in their entirety.

9-1.16 Progress Payments: Once each month for progress pay purposes, the City will prepare a written estimate of the total amount of completed work and accepted materials purchased by Contractor but not installed. The City shall retain five percent of such estimated value of the completed work and the unused materials and pay Contractor the balance after deducting all previous payments and all sums to be retained under the provisions of the Contract. No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract or when, in the Engineer's judgment, the total value of the completed work since the last estimate is less than \$500.00. No such estimate or payment shall be construed to be an acceptance of any defective work or improper materials.

After Contract acceptance, the Engineer will prepare a written proposed final estimate of the proposed final quantities of work completed under the Contract and the value of such work and will submit such estimate to Contractor. The City shall retain five percent of such estimated value of the work done and shall pay to Contractor the balance after deducting all amounts to be retained under the provisions of the Contract.

The City may, at its option and at any time, retain out of any amounts due Contractor sums sufficient to cover any unpaid claims of City or others, provided that sworn statements of all non-City claims shall have been filed with the Director of Finance.

9-1.16E(6) Substitution of Securities for Withheld Amounts: Pursuant to Public Contract Code section 22300, securities may be substituted for any moneys withheld by City to ensure performance under this Contract, provided that substitution of securities provisions shall not be required in contracts in which there will be financing provided by the Farmer's Home Administration of the United States Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 USC sections 1921 *et seq.*), and where federal regulations or policies or both do not allow the substitution of securities. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the City, or with a state or federally chartered bank as the escrow agent, which shall then pay such moneys to Contractor. The Director of Finance is authorized to execute substitution of securities agreements on behalf of the City. The City will return the securities to Contractor upon satisfactory completion of the Contract as determined by City in its sole discretion and the resolution of all outstanding claims against the securities. Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

Securities eligible for investment under this section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit or any other security mutually agreed to by Contractor and the

City, provided that the substituted security is equal to or not less than five percent of the Contract amount.

Security substitutions must be submitted by Contractor and approved by City prior to the time of the first progress payment to be made under the Contract. No other method of substituting securities for retention will be accepted. The security substitution shall be done only upon execution of an agreement satisfactory to City which includes the following provisions:

- a. The amount of securities to be deposited;
- b. The terms and conditions of conversion to cash in case of the default of Contractor; and
- c. The procedure for return of securities upon completion of the Contract.

9-1.17D Final Payment and Claims: The processing of payment of the final estimate shall not be commenced less than 35 days after the date of recording of the Notice of Completion with the County Recorder's Office. Contractor is advised that it takes approximately ten days for a check to be issued following a request for payment.

Contractor shall submit its written statement of all claims for additional compensation under the Contract to the Engineer within 15 days after submission to Contractor of the proposed final estimate.

If Contractor does not file a claim within the 15 day period, or upon Contractor's approval, the Engineer will issue a final written estimate and the City shall pay to Contractor the entire sum due after deducting all previous payments, if any, and all amounts to be retained under the provisions of the Contract.

If Contractor files a claim within the 15 day period, the Engineer will furnish a semi-final estimate and pay the amount due under the semi-final estimate within 30 days. The semi-final estimate is conclusive as to the amount payable except as may be affected by claims and any amount retained. The Engineer shall then consider and investigate such claim and shall make such revision in the final quantities as the Engineer may find to be due and shall then make and issue a final written estimate. The City will pay the amount due, after deducting all previous payments, if any, and amounts to be retained under the provisions of the Contract.

Any and all prior partial estimates and payments shall be subject to correction in the final estimate and payment.

The final estimate shall be conclusive and binding against both parties to the Contract on all questions relating to the performance of the Contract and the amount of work done thereunder and compensation therefor, except in the case of gross error.

9-1.17D(3) Final Determination of Claims: Claims filed by Contractor shall be in sufficient detail to enable the Engineer to determine the basis and amount of the Claims. Contractor shall also furnish reasonable documentation to the City to support Claims. If additional information is required by the Engineer, Contractor shall provide such information to the Engineer no later than the 15th day after receipt of the written request from the Engineer. If the 15th day falls on a weekend, holiday, or day City offices are closed, then the information shall be provided to the Engineer no later than close of the next business day. Failure to submit the requested information to the Engineer within the time specified will be sufficient cause for denying the Claim.

Contractor shall keep full and complete records of the costs and additional time incurred for any work for which a claim for additional compensation is made. The Engineer or any designated Claim investigator or auditor shall have access to those records and any other records as may be reasonably required by the Engineer to determine the facts or contentions in each Claim. Failure to grant access to such records shall be sufficient cause for denying the Claims.

9-1.22 Arbitration: Any references to Arbitration in the Standard Specifications are deleted in their entirety.

Claims submitted by Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code sections 12650 *et seq.*, the undersigned,

_____,
(Name)

_____ of
(Title)

(Contractor)

hereby certifies that the claim for additional compensation made herein is supported by a true statement of the actual costs incurred and time expended on this project and is fully documented by records maintained by Contractor.

Dated _____

/s/ _____

Subscribed and sworn before me this _____ day of

Notary Public

My Commission Expires _____

Failure to submit the notarized certificate will be sufficient cause for denying the claim.

Any claim for overhead expenses, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant. Any such overhead claim shall also be subject to audit by the City at its discretion.

Any costs or expenses incurred by the City in reviewing or auditing any claims that are not supported by Contractor's cost accounting or other records shall be deemed to be damages incurred by the City within the meaning of the California False Claims Act.



**TECHNICAL SPECIFICATIONS FOR
MAYACAMAS PUMP STATION
ROOF REPLACEMENT**

CONTRACT NO. C02273

2020

The Specifications were prepared under the direction of a Professional Architect, registered in the State of California, whose seal and signature appears below.



SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

The project includes: Roof replacement and louver replacement at the Mayacamas Pump Station Building. The work includes but is not limited to the following: complete removal of existing and installation of new roof system; installation of new parapet cap flashing; complete removal of existing louver and installation of new louver; documentation; and clean-up.

1.02 OWNER-FURNISHED AND INSTALLED ITEMS (N.I.C.)

- A. Certain items shown or referred to in the Contract Documents are not included in this contract and are marked "Not in Contract" (N.I.C). The Owner will furnish and install N.I.C. items. Contractor shall make required connections between N.I.C. items and mechanical and electrical services provided under this Contract.
- B. The Contractor shall cooperate with the Owner's workers and shall provide access to work areas and space to store tools, material and equipment.

1.03 OWNER-FURNISHED CONTRACTOR INSTALLED ITEMS (O.F.C.I.)

- A. Certain items required for this project will be furnished by the Owner and installed by the Contractor. Such items are referred to as "Owner-Furnished Contractor Installed (O.F.C.I.)." O.F.C.I. items shall be picked up by the Contractor at the Owner's warehouse, if applicable, and transported to the project site and installed by the Contractor.
- B. Contractor's installation of O.F.C.I. items shall include attaching or anchoring items, connecting utilities and controls, lubricating and necessary adjustment, startup, testing, placing items in service. If items are new Contractor shall turn over operation and maintenance manuals and equipment warranties to Owner.

1.04 TYPE OF CONTRACT

- A. The Work covered by these Contract Documents shall be provided under a single lump sum Contract.

1.05 DESCRIPTION OF BID ITEMS

- A. Bid Item 1, Roof replacement and louver replacement as shown on Drawings.
 - 1. The Work of Bid Item 1 is to include, but is not limited to:
Mobilization/demobilization, permits, Contract administration, removal/disposal of existing roof system, removal/disposal of existing cap flashing, new roof system installation (including vapor barriers and insulation), new cap flashing installation, re-painting of existing roof hatches, miscellaneous masonry veneer repair, touch-painting of existing surfaces, removal/disposal of existing louver, new louver installation, removal/re-installation of existing lighting, close-out documentation and clean-up.
 - 2. The lump sum price shall be full compensation for the preparation and installation or submittal of these materials, and for all labor, equipment, tools and incidentals to complete this item.

1.06 SCHEDULE OF VALUES

- A. At least twenty (20) days prior to the first Application for Payment Date, the Contractor shall submit a Schedule of Values allocating the Contract Price to various trades, types of work, pieces of equipment, and major tasks to assist the Engineer in evaluating the percentage completion for each part of the Work. The Contractor's overhead and profit shall be uniformly pro-rated over all items in the Schedule of Values. The Schedule of Values shall represent the actual cost of each segment of the work and shall not allocate higher costs, overhead or profit to work items scheduled for early completion. If the Engineer objects to the allocation of cost or the level of detail provided, the Contractor shall revise and resubmit the Schedule of Values.
1. Mobilization and Demobilization (Limited to 5% of Total Base Bid Price) is a lump sum bid for mobilization/demobilization and shall not exceed five percent (5%) of the Total Bid Price. Bid Item 1 shall include: the obtaining of insurance and bonds; moving onto the site of all equipment; submittal and approval of initial project schedule; preparation and submittal of the Water Pollution Prevention Plan and Erosion Control Plan, obtaining and paying for all permits by other agencies as applicable; furnishing temporary construction utilities (temporary power, toilets, water, fences, etc.); installing construction signs; temporary buildings and field office trailer(s); and other construction all as required for the proper performance and completion of the work.
 2. The lump sum bid for demobilization shall be twenty percent (20%) of the total bid item. Demobilization shall include site cleaning and restoration of surfaces within the job site; post-construction meeting, removal of all temporary facilities and equipment from the work area, disconnection of the temporary construction utilities and turnover of project to the Owner.
 3. Contractor may apply for payment of mobilization on a percent complete basis as the items covered in the Mobilization are being completed.
 4. Contractor may apply for payment up to fifty percent of (50%) of demobilization after the overall project substantial completion is achieved and the project begins to demobilize.
- B. The Contractor's Schedule of Values shall be in a form acceptable to the Engineer and have at least the following level of detail: a separate line item for each technical specification section, for site mobilization, for Construction Scheduling, for bonds and insurance, for final cleanup and for final deliverables. Subdivide final deliverables into: Record Drawings; Operation and Maintenance Manuals with Parts Lists; and Special Guarantees. Include the appropriate specification section and paragraph number for each line item. Subdivide major trades or portions of the work into multiple line items that relate to observable milestones to aid monthly progress evaluations in accordance with the following example:
- C. Roofing
1. Demolition
 2. Insulation
 3. PVC Membrane
 4. Flashings and Trim
 5. Cleanup

1.07 WORK SEQUENCE

- A. Construct and coordinate Work to accommodate Owner's continued use and operation of existing facility. Coordinate construction schedule with Owner.

- B. General Requirements. The Pump Station is critical water infrastructure. The Contractor is to conduct work such that the Owner's ability to meet its customer demands for water shall not be impaired or reduced in terms of the required quantity and quality of water. The Contractor's work must never prevent the plant from complying with the requirements established by State and Federal regulations.
1. Work Sequence and Constraints described hereinafter are critical events in work sequence which are presented to underscore the importance of proper sequencing, scheduling and coordination so that it is integrated with the required pump station operation. The work sequence and constraints presented do not describe all items affecting the completion of the work but are intended to describe important events necessary to minimize disruption of the existing facilities and to ensure compliance with water quality permit requirements.
 2. The existing facility where Contractor's work is to be done will be occupied by the Owner throughout the construction period. The Contractor shall provide all necessary access to the Owner's personnel as required to safely and efficiently operate/maintain the facilities. At all times during the Contract duration, the Contractor is to provide the Owner's personnel and representatives safe and immediate access to all process control equipment. Additionally, the Contractor is to provide for unimpeded access for all delivery vehicles transporting materials, chemicals and equipment to the facility for the Owner's operations.
 3. The Work shall be bid, scheduled and constructed in such a manner as to result in the least possible disruption to the operations and staff of the existing facility. Modifications that affect or may affect the operation of the facility shall not be made without first obtaining written permission from the Engineer. Disruptions or interference to one portion of the facility will likely affect other facility processes since they are interrelated and dependent on one another. The Contractor must fully understand any and all possible reductions on facility production and/or water quality as they plan the Work.
 4. The Contractor is advised that any shutdown of facilities will place a considerable burden on the Owner's staff before, during and after the shutdown. If through inadequate planning, lack of preparedness, faulty or inefficient workmanship or other causes controllable by the Contractor, delays, excessive time, or shutdowns are required that cause the Owner to incur extra cost or loss of revenue, said extra cost or loss of revenue will be assessed against the Contractor.
- C. Construction sequencing will be constrained by existing operating facilities at the Pump Station. Plant shutdowns are not allowed; prepare a construction schedule meeting the Contractor's work needs subject to that restriction.

1.08 SHUTDOWN OF EXISTING UTILITIES, SERVICES OR OPERATIONS

- A. Plant operation shutdowns are not allowed. Facility-wide utilities may not be interrupted. Specific electrical utility circuits may be interrupted at the breakers with the permission of and in coordination with the Owner.

1.09 CONTRACTOR'S USE OF SITE AND OWNER'S CONTINUED OPERATIONS

- A. The Contractor shall confine its use of the site for work and storage to the Work Area Limits shown on the Contract Drawings. The Contractor's use of adjacent lands and roads for access to move onto and off of the site and for daily access of workers, material and equipment shall be arranged and scheduled to minimize interference with the Owner's continued operations.

- B. The Owner intends to continue operation of portions of its existing facility during all or most of the construction period. The Contractor shall plan and schedule its work to minimize impacting the Owner's continued operations and shall, at all times, maintain safe access for the Owner's operating personnel and equipment.
- C. The Contractor shall be responsible for maintaining safe emergency exiting for the Owner's and Contractor's personnel in all areas affected by the Contractor's work.
- D. If operation of the Owner's existing facility is adversely affected by the Contractor's work, the Owner may suffer a financial loss and may make a claim against the Contractor to recovery its loss.

1.10 REGULATORY REQUIREMENTS

- A. The codes and regulations together with local amendments when applicable adopted by the State and other governmental authorities having jurisdiction shall establish minimum requirements for this project. This project shall comply with the following:
 - 1. California Building Code (CBC) 2019
 - 2. California Fire Code (CFC) 2019 edition
 - 3. California Electric Code (CEC) 2019 edition
 - 4. California Energy Code 2019 edition
 - 5. California Green Building Standard Code (2019)
 - 6. California Code of Regulations
 - a. Title 8, Industrial Relations: Especially CAL-OSHA.
 - b. Title 19, Public Safety: Portions of the work regulated by the State Fire Marshal.
 - c. Title 24, Building Standards: Regulations applicable to Essential Service Facilities, Energy Conservation, Public Assembly and Handicapped Access.
- B. The latest edition of the requirements in effect at the date of submission of bids shall apply.
- C. General Conditions address the Contractor's responsibility to comply with laws and codes applicable to Means and Methods for performing the Work.
- D. General Conditions address the Contractor's responsibility to report code deficiencies in the design to the Engineer prior to proceeding with the Work.
- E. Paragraphs addressing Pre-Engineered Systems and Performance Specifications in other Sections cover the Contractor's responsibility to comply with code requirements when (1) performance specifications are used to describe all or portions of Work or items and (2) when pre-engineered (contractor designed) systems are specified.
- F. In cases where the Contract Documents are more restrictive than applicable codes, the Contractor shall comply with the Contract Documents.

1.11 REFERENCE STANDARDS

- A. When these specifications state that Work or tests shall conform to specific provisions in a referenced standard, specification, code, recommendation or manual published by an association, organization, society or agency the referenced provisions, as they apply to the Work of the Contractor only shall be considered a part of these specifications as fully as if included in total. When these specifications or applicable codes contain higher or more restrictive requirements than those contained in reference standards these specifications or applicable codes shall govern.

- B. The latest edition of a referenced standard published at the time of submission of bids shall apply unless a specific date for the referenced standard is cited in these specifications.
- C. General provisions in referenced standards, specifications, manuals or codes shall not change the specific duties and responsibilities between any of the parties involved in this work from those described in the General Conditions. Provisions in referenced standards with regard to measurement and payment shall not apply to this Work unless specifically cited.

1.12 SPECIFICATION LANGUAGE AND STYLE

- A. Many parts of the Specifications as well as notes on the Drawings are written in the active voice and are addressed to the Contractor.
 - 1. When words or phrases requiring an action or performance of a task are used, it means that the Contractor shall provide the action or perform the task. For example: provide, perform, install, furnish, erect, connect, test, operate, adjust or similar words mean that the Contractor shall perform the action or task referred to.
 - 2. When words or phrases requiring selection, acceptance, approval, review, direction, designation or similar actions are referred to, it means that such actions are the Owner's or the Engineer's prerogative and that the Contractor must obtain such action before proceeding.
- B. Requirements in the Specifications and Drawings apply to all work of a similar type, kind or class even though the word "all" or "typical" may not be stated.

1.13 DEFINITIONS

- A. The following terms, when used in the Contract Documents, shall have the meanings listed:

| | |
|--------------|--|
| ACCEPTABLE | "acceptable to the Engineer" |
| PERFORM | "perform all operations required to complete the work referred to in accordance with the intent of the Contract Documents" |
| PROVIDE | "furnish and install the work referred to including proper anchorage, connection to required utilities or other work, testing, adjustment and startup ready to put in service and perform the intended function" |
| REQUIRED | "required by the Contract Documents or required to complete the Work and produce the intended results" |
| SATISFACTORY | "acceptable to the Engineer" |
| SHOWN | "as indicated on the Drawings" |
| SITE | "geographical location of the Project and land within the work area shown on the contract drawings and within which the Work will be installed or built" |
| SPECIFIED | "as written in the Contract Documents including the Specifications and the Drawings" |
| SUBMIT | "submit to the Engineer" |

1.14 ABBREVIATIONS

- A. The following acronyms or abbreviations are used in these specifications for the organizations listed.

| <u>Abbreviation</u> | <u>Stands for</u> |
|---------------------|--|
| AASHTO | American Association of State Highway and Transportation Officials |
| AAMA | Architectural Aluminum Manufacturers Association |
| ABMA | American Boiler Manufacturers Association |
| ACI | American Concrete Institute |
| ADC | Air Diffusion Council |
| AGA | American Gas Association |
| AGMA | American Gear Manufacturers Association |
| AI | Asphalt Institute |
| AISC | American Institute of Steel Construction |
| AISI | American Iron and Steel Institute |
| AITC | American Institute of Timber Construction |
| AMCA | Air Moving and Conditioning Association |
| ANSI | American National Standard Institute (formerly United States of America Standards Institute) |
| APA | American Plywood Association |
| API | American Petroleum Institute |
| APWA | American Public Works Association |
| AREA | American Railway Engineering Association |
| ASCE | American Society of Civil Engineers |
| ASHRAE | American Society of Heating, Refrigerating and Air Conditioning Engineers |
| ASME | American Society of Mechanical Engineers |
| ASTM | ASTM International |
| AWPA | American Wood-Preservers' Association |
| AWS | American Welding Society |
| AWWA | American Water Works Association |
| CAGI | Compressed Air and Gas Institute |
| CAL/OSHA | State of California Department of Industrial Relations, Division of Industrial Safety |
| CAL TRANS | California Department of Transportation |
| CBC | California Building Code |
| CBM | Certified Ballast Manufacturers |
| CBR | California Bearing Ratio |
| CEC | California Energy Code |
| CI | Chlorine Institute |
| CISPI | Cast Iron Soil Pipe Institute |
| CMAA | Crane Manufacturers Association of America |
| CPSC | Consumer Products Safety Commission |
| CRA | California Redwood Association |
| CRSI | Concrete Reinforcing Steel Institute |
| CS | Commercial Standards for the U.S. Department of Commerce |
| CTI | Cooling Tower Institute |
| DFPA | Douglas Fir Plywood Association |
| EIA | Electronic Industries Association |
| EPA | U.S. Environmental Protection Agency |
| ETL | Electronic Testing Laboratory |
| FM | Factory Mutual Insurance Company |
| FPS | Fluid Power Society |
| FS | Federal Specifications |
| GO 95 | General Order No. 95, California Public Utilities Commission Rules for Overhead Electric Line Construction |

| <u>Abbreviation</u> | <u>Stands for</u> |
|---------------------|---|
| GO 128 | General Order No. 128, California Public Utilities Commission Rules for Underground Electrical Construction |
| HI | Hydraulic Institute |
| HMI | Hoist Manufacturers Institute |
| IAPMO | International Association of Plumbing and Mechanical Officials |
| IBC | International Building Code |
| ICBO | International Conference of Building Officials |
| IEEE | Institute of Electrical and Electronic Engineers |
| IES | Illuminating Engineering Society |
| IFC | International Fire Code |
| IGCC | Insulating Glass Certification Council |
| IMC | International Mechanical Code |
| IPCE | International Power Cable Engineers Association |
| ISA | Instrument Society of America |
| NAAMM | National Association of Architectural Metal Manufacturers |
| NBS | National Bureau of Standards |
| NCPI | National Clay Pipe Institute |
| NEC | National Electric Code |
| NEMA | National Electrical Manufacturers Association |
| NETA | International Electrical Testing Association |
| NFPA | National Fire Protection Association |
| NGVD | National Geodetic Vertical Datum |
| NSF | National Sanitation Foundation |
| NWMA | National Woodwork Manufacturers Association |
| OSHA | Occupational Safety and Health Act |
| PCA | Portland Cement Association |
| REA | Rural Electrification Administration |
| SAMA | Scientific Apparatus Makers Association |
| SMACNA | Sheet Metal and Air Conditioning Contractors National Association |
| SSPC | Structural Steel Painting Council |
| TCA | Tile Council of America |
| UBC | Uniform Building Code |
| UFC | Uniform Fire Code |
| UMC | Uniform Mechanical Code |
| UPC | Uniform Plumbing Code |
| USDC | U.S. Department of Commerce |
| UL | Underwriters Laboratories |
| WCLIB | West Coast Lumber Inspection Bureau |
| WIC | Woodwork Institute of California |
| WQCB | Water Quality Control Board (Regional) |
| WRCB | Water Resources Control Board |

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01040

COORDINATION AND PROJECT REQUIREMENTS

PART 1 - GENERAL

1.01 PROJECT COORDINATION

- A. Coordinate scheduling, submittals and work of various Sections of the Specifications and subcontractors to assure efficient and orderly sequence of interdependent construction. Coordinate construction scheduling with plant and utility shutdowns with requirements and limitations in Section 01010. Provide accommodations for items to be furnished and installed by Owner and labeled "NIC" (not in contract) on the Drawings and for Owner Furnished Contractor Installed (O.F.C.I.) items.

1.02 CUTTING, FITTING, AND PATCHING

- A. Provide cutting, fitting, or patching required to complete the Work and to make all of its parts fit together properly. Include cutting, fitting, and patching required to:
 - 1. Fit the several parts together and to integrate with other work.
 - 2. Uncover work to install or correct ill-timed work.
 - 3. Provide openings in elements of work for penetrations of mechanical and electrical work.
 - 4. Remove and replace defective and non-conforming work.
 - 5. Remove samples of installed work for testing.
- B. Request guidance from the Engineer prior to beginning cutting or altering construction, which affects:
 - 1. Structural integrity of any element.
 - 2. Functional performance of any element.
 - 3. Integrity of weather-exposed or moisture-resistant elements.
 - 4. Efficiency, maintenance, or safety of elements.
 - 5. Visual qualities of sight-exposed elements.
 - 6. Work by Owner or separate contractor.
- C. Execute cutting and patching using workers that specialize in and are skilled in installing the type of work being cut or patched.
- D. Perform work in accordance with the Contract Documents or in the absence of specific requirements comply with best trade practice for the work involved.
 - 1. Execute work by methods that will avoid damage to other work.
 - 2. Provide proper support and substrates to receive patching and finishing materials.
 - 3. Cut concrete materials using masonry saw or core drill. Locate all reinforcing steel, conduits and pipes with electronic detecting devices prior to cutting or core drilling existing concrete.
 - 4. Replace or patch work with new materials meeting the requirements of these specifications or if not specified matching materials and finishes of existing or adjacent work.
 - 5. Cut wall finishes and flashings to fit snugly around pipes, sleeves, ducts, conduit, and other penetrations. Provide fire and/or acoustical caulking as required by code or conditions of use.
 - 6. Maintain integrity of wall, ceiling, or floor construction; completely seal voids against smoke, fire and water.
 - 7. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

8. Report any hazardous or unsatisfactory conditions to the Engineer.

1.03 PRECONSTRUCTION MEETING

- A. Prior to beginning the Work, the Contractor and its key personnel and Subcontractors including the Contractor's Superintendent, Project Manager, and Field Engineer shall attend a meeting with the Owner and the Engineer to discuss the following:
 1. Name, Authority, and Responsibilities of Parties Involved
 2. Project Procedures:
 - a. Progress meetings
 - b. Correspondence
 - c. Notification
 - d. Submittal of Product Data, Shop Drawing Samples, and Proposed Equivalents
 - e. Requests for Information
 - f. Response to Requests for Information
 - g. Requests for Quotation
 - h. Work Directive Change
 - i. Change Orders
 - j. Engineer's "Items of Concern List"
 - k. Application for Payment
 3. Temporary Schedule and Contractor's Construction Schedule
 4. Temporary Facilities and Control
 5. Testing During Construction
 6. Contractors Coordination
 7. Mechanical/Electrical Coordination
 8. Maintenance of Record Drawings
 9. Owner Provided Items or Work and Owner Furnished Contractor Installed items
 10. Early Beneficial or Partial Occupancy
 11. Punch Lists and Project Closeout Procedures
 12. Final Deliverables including Record Drawings, Operation and Maintenance Manuals, and Special Guarantees.

1.04 PROGRESS MEETINGS

- A. The Engineer will conduct bi-weekly progress meetings with Contractor and Owner at job site. Attendance required by Contractor's project manager, superintendent and affected Subcontractors and suppliers. The Engineer will prepare, maintain, and distribute agenda and dated record of: (1) actions required and taken and (2) decisions needed and made.
- B. Agenda:
 1. Review critical items/action list.
 2. Review work progress. Compare actual progress with planned progress shown on Contractor's rolling three-week and Construction Schedule. Discuss corrective action required. Compare actual and projected progress with Contractor's Construction Schedule, propose methods to correct deficiencies.
 3. Review status of Submittals; review delivery dates and delivery dates for critical items.
 4. Review coordination problems.
 5. Schedule needed testing and critical inspections.
 6. Review critical requirements for each trade or major piece of equipment prior to beginning work or installation.

7. Discuss Contractor Quality Control.
8. Discuss open items on Engineer's "Items of Concern List."
9. Discuss impact of proposed changes on progress Schedule.
10. Other business.

1.05 PERFORMANCE SPECIFICATIONS AND CONTRACTOR DESIGNED WORK

- A. Work under this Contract may be specified by a combination of descriptive, performance, reference standard and proprietary specifications. In the event of conflict between any of the various specification methods used to specify a single item the order of precedence shall be the order in which the methods are listed in the preceding sentence. The terms used to describe types of Specifications are taken from the Construction Specification Institute (CSI) Handbook of Practice.
- B. Where Specifications are used to define the characteristics of Contractor designed systems, items or components, the Contractor shall be fully responsible to design, engineer, manufacture, and install the systems, items and components to meet the specified functional requirements, performance requirements, quality standards, durability standards and conditions of use as well as all applicable codes, regulations and referenced trade or industry standards. The Contractor shall perform such design by employing engineers licensed in the State in which the Work is being constructed. The Contractor's design submittals shall include calculations and assumptions on which the design is based and shall be stamped and signed by appropriately licensed engineers.
- C. Where performance-type specifications are used or where pre-engineered or Contractor-designed systems, elements, equipment or components are called for, the Owner and the Engineer shall have the right to rely on the expertise and professional competence of the Contractor's design. Favorable review of the Contractor's design submittal shall not relieve the Contractor from full responsibility for the adequacy of the Contractor's design.

1.06 MATERIAL AND EQUIPMENT

- A. General:
 1. Verify that products delivered meet requirements of Contract Documents and the requirements for Favorably Reviewed submittals.
- B. Compatibility of Equipment and Material:
 1. Similar items, equipment, devices or products furnished under a single specification section shall all be made by the same maker and have interchangeable parts.
 2. In addition, but only if so stated in each affected Specification Section, similar items furnished under two or more Specification Sections shall be made by the same maker and have interchangeable parts.
 3. All similar materials or products that are interrelated or used together in an assembly shall be compatible with each other.
- C. Transportation and Handling:
 1. Transport and handle products in accordance with manufacturer's instructions.
 2. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
 3. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- D. Storage and Protection:

1. Store and protect products in accordance with manufacturer's instructions. Seals and labels shall be intact and legible.
 2. Store moisture-sensitive products in weather-tight, humidity- and temperature-controlled enclosures.
 3. For exterior storage of fabricated products, place items on sloped supports, aboveground.
 4. Cover products subject to deterioration from moisture, dust, or sunlight with opaque watertight but breathable sheet covering. Provide ventilation to avoid condensation.
 5. Provide offsite storage and protection including insurance coverage when site does not permit onsite storage or protection.
 6. Provide facilities, equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 7. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- E. Installation Standards and Manufacturers' Recommendations:
1. Install all products and materials in strict compliance with the most restrictive of the following:
 - a. The manufacturer's or provider's written instructions or recommendations. Follow step-by-step installation procedures.
 - b. Recommendations of referenced trade associations or standards.
 - c. The Contract Specifications and Drawings.
 2. Where conflicts exist, present alternatives with advantages and disadvantages to Engineer for decision.
- F. If reference standards or manufacturer's instructions contain provisions that would alter or are at variance with relationships between the parties to the Contract set forth in the Contract Documents, the provisions in the Contract Documents shall take precedence.

1.07 BACKING, SUPPORTS AND FASTENERS

- A. Provide backing, supports, bracing, fasteners and other provisions required for the proper support and attachment of all work. Backing, supports, bracing and fasteners shall be sized to resist vertical and horizontal loads including seismic and wind loads required by codes listed under Regulatory Requirements in Section 01010. Where finishes in existing facilities must be removed to install backing or where finishes are installed in new construction prior to installing backing the Contractor shall remove finishes, install backing and reinstall finishes.

1.08 SAFETY

- A. In accordance with generally accepted construction practice, applicable law and the General Conditions the Contractor shall be solely and exclusively responsible for and have control over:
1. Construction means, methods, techniques, sequences, procedures and for coordinating all portions of the Work under the Contract Documents.
 2. Safety of employees engaged in the work while on and off the site.
 3. Safety of the Owner, the Engineer, the Design Engineer, and others who may visit or be affected by the work.
 4. Safety of the work itself including material and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's subcontractors or sub-subcontractors.
 5. Safety of other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground

facilities not designated for removal, relocation or replacement in the course of construction.

6. Safety programs, equipment and protective devices required to assure the safety of persons and property for whom/which the Contractor is responsible.
- B. The Owner, the Engineer, and the Design Engineer and each of their officers, employees, agents and consultants shall not be responsible for any construction means, methods, techniques, sequences, nor for safety in, on or about the site, nor for coordinating any part of the Work.
- C. The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.
- D. The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, necessary fences and other safeguards for safety and protection of persons and property on and off the site and shall: (1) post danger signs and other warnings against hazards, (2) promulgate safety regulations, and (3) notify owners and users of adjacent sites and utilities when the Contractor's operations may affect them.
- E. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to the Owner and Engineer.
- F. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs required in connection with the Work and shall send copies of all accident, injury or work-related illness reports and of all notices of unsafe conditions to the Engineer.
- G. The Contractor shall not load or permit heavy weights to be placed on any part of the construction or site so as to endanger its safety.
- H. The duties of the Owner, the Engineer and the Design Engineer in conducting review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's work methods, equipment, bracing, scaffolding or safety measures in, on, or near the construction site.
- I. The Contractor is hereby informed that work on this project could be hazardous. The Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instructions as required to prevent injury to personnel and damage to property, and to comply with all applicable laws and regulations including State OSHA, Federal OSHA, and other regulations referenced in these Contract Documents.
- J. The Contractor shall, at all times, maintain the job in a condition that is safe for the Owner, the Engineer and their consultants to make site visits and to conduct construction reviews. If the Owner or the Engineer cannot allow personnel to visit the job because it is not safe, the Contractor is not providing required safe access to the Work as required by General Conditions.
- K. The Contractor shall prepare a Safety Plan meeting the requirements of applicable regulations. As a minimum, the Contractor's Safety Plan shall set forth definite procedures for informing workers about safety, for instructing workers in safe practices, for assuring that workers are using appropriate safety equipment and safe work practices and for reporting accidents.

1.09 CONTRACTOR'S QUALITY CONTROL

- A. The Contractor shall be fully responsible for inspecting the work of its suppliers and subcontractors to assure that the work when completed will comply with the standards for materials and workmanship required by the Contract Documents.
- B. Inspections, periodic observations and testing performed by the Owner or the Engineer are for the Owner's benefit and information only and shall not be construed as partial or incremental acceptance of the work and shall not be deemed to establish any duty on the part of the Owner or the Engineer to the Contractor, its subcontractors or suppliers.
- C. The Engineer will have authority to reject Defective Work. The Engineer will have authority to require additional inspection or testing of the Work whether or not such Work is fabricated, installed or completed. Neither this authority of the Engineer nor a decision not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.
- D. Observations by the Engineer or tests, inspections or approvals by others shall not relieve the Contractor from its obligation to perform the Work in accordance with the Contract Documents.
- E. The Contractor shall:
 - 1. Monitor quality control over suppliers, manufacturer, products, services, site conditions, and workmanship, to produce work of specified quality.
 - 2. Comply fully with manufacturer's installation instructions, including performing each step in sequence as recommended by the manufacturer.
 - 3. Submit a Request for Information (RFI) to the Engineer before proceeding with work when manufacturers' instructions or reference standards conflict with Contract Documents.
 - 4. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
 - 5. Perform work by persons specializing in the specific trade and class of work required and qualified to produce workmanship of specified quality.
 - 6. Secure products in place with positive anchorage devices designed and sized to withstand seismic, static and dynamic loading, vibration, and physical distortion or disfigurement.
- F. If reference standards or manufacturers' instructions contain provisions that would alter or are at variance with relationships between the parties to the Contract set forth in the Contract Documents, the provisions in the Contract Documents shall take precedence.
- G. The Contractor shall provide assistance required by the Engineer to adequately inspect the Work including ladders, scaffolding, lighting, ventilation and other aids to facilitate access and provide a safe working environment.

1.10 WARRANTY INSPECTIONS AND CERTIFICATIONS

- A. Provide inspection and warranty certification services in accordance with General Conditions and specific requirements contained in each technical specification section.
- B. Unless otherwise specified, the Contractor shall arrange and pay for tests, inspections and approvals other than Special Inspections that are required by laws, ordinances, rules, regulations, orders of public authorities having jurisdiction or by the Contract Documents. All such tests, inspections and approvals shall be

performed by an independent testing laboratory or inspection agency acceptable to the Engineer or to the appropriate public authority. Samples to be tested and items of work to be inspected will be selected by the Engineer or the public authority requiring the test or inspection. Test reports, inspection reports and certificates shall be submitted directly to the Engineer by the performing laboratory or agency. The Contractor shall notify the Engineer at least two (2) days prior to all tests and inspections to permit observation by the Engineer.

- C. The Contractor shall provide access for Special Inspections and notify the Owner two (2) working days in advance of when work requires Special Inspection.

PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 SUBMITTAL PROCEDURES

- A. Accompany each submittal with a Submittal form, attached hereto, which contains the following information:
 - 1. Contractor's name and the name of Subcontractor or supplier who prepared the submittal.
 - 2. The project name and identifying number.
 - 3. Description of the submittal and reference to the Contract requirement or technical specification section and paragraph number being addressed.
- B. Unless otherwise specified, provide submittals in electronic PDF searchable format.
- C. Submittals which include more than one (1) item or piece of equipment shall include a Table of Contents following the standard submittal form and cover sheets
- D. Each submittal shall include a copy of the specification section and all referenced and applicable sections with addendum updates included. For each specification section, checkmark each paragraph to indicate specification compliance with the full paragraph as a whole or marked to indicate requested deviations from specification requirements. Each deviation from the specifications requested by the Contractor shall be underlined and referenced by a unique number in the margin to the right of the identified paragraph. The submittal shall include a detailed written explanation of the reasons for requesting the deviation that is clearly labeled to correspond with the unique number provided in the margin. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal on the basis that the submittal is incomplete and will be returned to the Contractor REJECTED – RESUBMIT with no further consideration.
- E. Project Initiation Submittals. At a minimum, provide the following project initiation submittals prior to mobilization.
 - 1. Designation of Superintendent: Include name, address, home telephone number and a brief resume.
 - 2. List of Subcontractors and Major Suppliers: Include address, telephone number and name of responsible party.
 - 3. Schedule of Values, in a form acceptable to the Engineer: See General Conditions.
- F. The Contractor shall allow 30 days for the Engineer's review of each submittal and 30 days for each resubmittal unless a different period is specified by the Engineer in writing. If the Engineer requests additional information or clarification of a submittal, the 30 days shall be measured from the date the additional information or clarification is received. If the Contractor requires more than two submittals to obtain the Engineer's Favorable Review, the Contractor shall compensate the Owner for the cost of the Engineer's additional review time. The Contractor shall not perform work for which reviewed submittals are required without obtaining Favorable Review of submittals.

1.02 SCHEDULE OF SUBMITTALS

- A. See General Conditions. Within fifteen (15) days after the Notice to Proceed, submit a Schedule of Submittals showing the date by which each submittal required for Product Review or Product Information will be made. Identify the items that will be included in each submittal by listing the item or group of items and the Specification Section and paragraph number under which they are specified. Indicate whether the submittal is required for Product Review of Proposed Equivalents, Shop Drawings, Product Data or Samples or required for Product Information only.

1.03 PLAN OF OPERATIONS

- A. Before beginning on site work, submit a plan showing Contractor's intended use of the site assigned to it. Show location of enclosing fence, access points and gates. Show location for Contractor's, Subcontractor's, and Engineer's field office and parking. Show location of Contractor's and Subcontractor's work areas and storage areas.

1.04 CONSTRUCTION SCHEDULE

- A. See also General Conditions.
- B. The form of Construction Schedule may be selected by the Contractor, but the Schedule shall meet the minimum requirements of the General Conditions.
- C. Revise the Construction Schedule and resubmit within seven (7) days following any monthly meeting to review Contractor's Application for Payment when Contractor's work is fifteen (15) days or more behind schedule.
- D. Accelerated Work if Required to Meet Schedule: Give Engineer three (3) days prior notice of construction that will take place outside of normal work hours or work days. Compensate Owner for extra inspection cost caused by Accelerated Work required to meet Schedule.
- E. Give Engineer three (3) days prior notice of normal work days on which construction will not take place or of scheduled construction that will not take place. Compensate Owner for extra inspection cost resulting from failure to give notice.

1.05 SHOP DRAWING, PRODUCT DATA AND SAMPLES SUBMITTED FOR PRODUCT REVIEW

- A. This paragraph covers submittal of Shop Drawings, Product Data and Samples required for the Engineer's review referred to as Product Review submittals in the Technical Specifications. Submittals required for information only are referred to as Product Information submittals in the Technical Specifications and are covered in paragraph 1.07. Also see General Conditions. All shop drawings, product data and samples shall be considered as Product Review submittals unless specifically called out as a Product Information submittal in a technical specification.
- B. The Contractor shall make all Product Review submittals early enough to allow adequate time for the Engineer's review, for manufacture and for delivery at the construction site without causing delay to the Work. Submittals shall be made early enough to allow for unforeseen delays such as:
 - 1. Failure to obtain Favorable Review because of inadequate or incomplete submittal or because the item submitted does not meet the requirements of the Contract Documents.
 - 2. Delays in manufacture.
 - 3. Delays in delivery.

- C. Content of Submittals:
1. Each submittal shall include all of the items and material required for a complete assembly, system or Specification Section.
 2. Submittals shall contain all of the physical, technical and performance data required by the specifications or necessary to demonstrate conclusively that the items comply with the requirements of the Contract Documents.
 3. Include information on characteristics of electrical or utility service required and verification that requirements have been coordinated with services provided by the Work and by other interconnected elements of the Work.
 4. Provide verification that the physical characteristics of items submitted, including size, configuration, clearances, mounting points, utility connection points and service access points, are suitable for the space provided and are compatible with other interrelated items that are existing or have or will be submitted.
 5. Label each Product Data Submittal, Shop Drawing and Sample with the information required in paragraph 1.01A of this Section. Highlight or mark every page of every copy of all Product Data submittals to show the specific items being submitted and all options included or choices offered.
 6. Additional requirements for Product Review submittals are contained in the Technical Specification sections.
 7. Designation of work as "NIC" or "by others," shown on Shop Drawings, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who has prepared the Shop Drawings.
- D. Compatibility of Equipment and Material: Verify that items contained in the same or in different submittals meet the requirements in the paragraph titled "Material and Equipment" in Section 01040 especially the subparagraphs titled "Compatibility of Material and Equipment."
- E. Requirements for Contractor Designed Items and for First Specified (Named) Items: Verify that items meet the requirements in the paragraph titled "Performance Specifications and Contractor Designed Items" in Section 01040.
- F. Requirements for the Contractor's review and stamping of submittals prepared by the Contractor or by Subcontractors or suppliers prior to submitting them to the Engineer are covered in the General Conditions.
- G. Submittals that contain deviations from the requirements of the Contract Documents shall be accompanied by a separate letter explaining the deviations. See also General Conditions. The Contractor's letter shall:
1. Describe the deviation from the specifications requested and identify with a unique number and reference to the Specification Section paragraph or Drawing requirement. The letter shall include a detailed written explanation of the reasons for requesting the deviation that is clearly labeled to correspond with the unique number provided.
 2. Describe the proposed alternate material, item or construction and explain its advantages and/or disadvantages to the Owner.
 3. State the reduction in Contract Price if any that is offered to the Owner.
- H. Engineer's Review Procedure and Meaning:
1. The Engineer will stamp and mark each Product Review submittal prior to returning it to the Contractor. The stamp will indicate whether or not the review was favorable and what action is required of the Contractor. Review categories "No Exceptions Taken" and "Make Corrections Noted" both indicate Favorable Review.
 2. At a minimum, Favorable Review is contingent on:

- a. The compatibility of items included in a submittal with other related or interdependent items included in previous or future submittals.
 - b. Future submittal of items related to or required to be part of this submittal that were not included with this submittal.
3. Favorable Review of a submittal does not constitute approval or deletion of items required as part of the submittal but not included with the submittal. Favorable Review of items included in the submittal does not constitute deletion of specified features, options or accessories that were not included in the submittal.
4. The action required by the Contractor for each category of review is as follows:
 - a. **NO EXCEPTIONS TAKEN.** NO RESUBMITTAL REQUIRED.
 - b. **MAKE CORRECTIONS NOTED:**
 - 1) **NO RESUBMITTAL REQUIRED.** The Contractor shall make corrections noted prior to manufacture.
 - 2) **PARTIAL RESUBMITTALS REQUIRED.** The Contractor shall submit related accessory or optional items as noted which are required but were not included with the submittal and/or shall resubmit unsatisfactory portions or attributes of items as noted. The Contractor may proceed to manufacture those portions of the submittal that will be unaffected by required resubmittals.
 - c. **AMEND AND RESUBMIT.** The Contractor shall amend and resubmit the submittal as noted or required to comply with the Contract Documents.
 - d. **REJECTED - RESUBMIT.** The item submitted does not comply with the Contract Documents. Resubmit items that comply with the requirements of the Contract Documents.
 - e. **NOT REVIEWED.** The item submitted is incomplete or does not comply with the Contract Documents. The item has not been reviewed and is returned to the Contractor for correction.
 - f. **RECEIPT ACKNOWLEDGED.** Receipt of a submittal that is not subject to the Owner's review and approval is acknowledged; and, is being filed for information purposes only. Generally used in acknowledging receipt of Product Information. No further submittal activity is required by the Contractor.
5. The letter of transmittal accompanying the returned Product Review submittal may contain numbered notes. Marking a corresponding number on a Shop Drawing or Product Data submittal shall have the same effect as applying the entire note to the submittal.
- I. Re-submittals that contain changes that were not requested by the Engineer on the previous submittal shall be accompanied by a letter explaining the change.
- J. Favorable Review Required Prior to Proceeding: Do not proceed with manufacture, fabrication, delivery or installation of items prior to obtaining the Engineers Favorable Review of Product Review submittals. See also General Conditions.
- K. Intent and Limitation on Engineer's Review:
 1. See also General Conditions.
 2. The Contractor has primary responsibility for submitting and providing work that complies with the requirements of the Contract Documents. That responsibility cannot be delegated in whole or in part to subcontractors or suppliers. Neither the Engineer's Favorable Review nor the Engineer's failure to notice or comment on deficiencies in the Contractor's submittals shall

relieve the Contractor from the duty to provide work, which complies with the requirements of the Contract Documents.

1.06 PROPOSED EQUIVALENTS (SUBSTITUTIONS)

- A. See also General Conditions.
- B. The term "first specified item" or "first named maker" refers to the first product identified in the Specifications by a model number or trade name and/or by a maker's name for a specified item. When the first specified item is followed by a second maker's name and "or equal," the Contractor may submit Proposed Equivalent (Substitution) items for the Engineer's review. Proposed Equivalent (Substitution) items that are in the Engineer's judgment equal to the first specified item in quality, utility, and appearance, will be Favorably Reviewed. Where a product description and first maker's name is followed by "or equal" with no second maker's name, it means the specifier knows of no equivalent product and the Contractor may submit Proposed Equivalent (Substitution) products by other makers for review.
- C. Submit Proposed Equivalent (Substitutions) submittal form, attached hereto and comply with the submittal requirements for Shop Drawings, Product Data, and Samples submitted for Product Review in another paragraph of this Section.
- D. Time of Submittal:
 - 1. General Conditions require submittal of Proposed Equivalents (Substitutions) within thirty-five (35) days of the Notice to Proceed. The Engineer may agree to a later submittal date if requested in writing within thirty-five (35) days of the Notice to Proceed. The request shall identify the item; give the Specification reference, and proposed manufacturer and model number of the item that will be submitted and the proposed submittal date.
 - 2. The Engineer's agreement to a later submittal date shall be in writing and shall not be construed as Favorable Review or acceptance of the manufacturer or item proposed.
- E. Content of submittals shall be the same as that required for Product Data, Shop Drawings and Samples submitted for Product Review in another paragraph of this Section. In addition, the Contractor shall provide information on several recent similar installations of the item to verify its suitability. The information shall include the project name and location, the Owner's name, address, telephone number and name of a knowledgeable person to contact for information on performance of the product.
- F. When the Contractor has listed specific maker's products submitted with its Bid, no changes will be permitted without submittal of acceptable evidence justifying the change and the Engineer's written approval.
- G. If a non-equivalent substitute is submitted for review, it shall be accompanied by a proposed reduction in Contract Price which shall include the increased cost of Engineering service required to evaluate the proposed substitute (which shall be paid to the Owner whether or not the substitute is accepted) plus the greater of 1) the difference in price between the first specified item and the item submitted and 2) the difference in value to the Owner between the two items.

1.07 PRODUCT INFORMATION SUBMITTALS

- A. See also General Conditions. Submittal for Informational Purpose Only is an item required for the Owner's permanent records relating, in part, to future maintenance, repair, modification, replacement of work or as otherwise required. The Contractor

shall clearly separate information for Product Review from information for Product Information in submittals that include both.

- B. Make Product Information submittals prior to delivering material, products or items for which Product Information submittals are required.
- C. The Contractor has the sole and exclusive responsibility for furnishing products and work that meets the requirements of the Contract Documents.
- D. The Engineer reserves the right to comment on any submittal and to reject any product or work delivered, installed or otherwise at any time that the Engineer become aware that it is defective or does not meet the requirements of the Contract Document. See also General Conditions.

1.08 OPERATION AND MAINTENANCE MANUALS AND PARTS LISTS

- A. Operation and maintenance (O&M) information shall be submitted in a format best suited for the type of manual to be provided to the Owner. Unless otherwise specified, provide information in electronic PDF searchable format.
- B. Three complete sets of maintenance instructions covering the roofing system furnished under Division 7 shall be delivered to the Owner. One set of originals must be part of the three set of operation and maintenance instructions required, including original manuals covering components manufactured by others. Include electronic copies in searchable PDF format for all O&M Manuals. All project specific and custom-prepared documents (e.g. bill of materials, etc.) shall also be provided in their native format (Microsoft Office®, Autodesk AutoCAD®, etc.).

1. The manual for each piece of equipment shall be a separate document with the following specific requirements:

a. Contents:

- 1) Table of contents and index
- 2) Brief description of each system and components
- 3) Delivery and storage instructions
- 4) Assembly and installation instructions
- 5) Routine maintenance procedures and reinstallation instructions
- 6) Parts identification and name, address, and telephone numbers for local service representative and source of parts
- 7) List of spare parts recommended to have on hand, manufacturer's price and recommended quantity
- 8) One copy of each favorable reviewed shop drawing and each Contractor's coordination and layout drawing

2. Formatting and Materials

a. Hardcopies

- 1) Loose leaf on 20 lb. punched paper
- 2) Holes reinforced with plastic cloth or metal
- 3) Page size, 8-1/2-in by 11-in
- 4) Diagrams, illustrations, and attached foldouts as required, of original quality, reproduced by dry copy method
- 5) Covers: oil, moisture, and wear resistant 9 by 12 size

b. Electronic

1) Adobe portable document format (PDF) manual documents:

- a) Formatted version 3.0 or higher.
- b) Produce the PDF files by either direct digital conversion or optical scanning. Use only original documents if the scanning method is employed. Scanning of copied material is not permitted.
- c) Convert black and white documents to black and white PDF files.
- d) Convert color documents to color PDF files.

- e) Large manuals may be broken down into several linked files.
- f) Save each PDF file using "image and text" format so as to permit later indexing of the document.
- g) Provide each PDF file with a table of contents of navigation links to major topic sections.
- h) Links may be provided to the manufacturer world wide web site, or other URL site addresses, or to other PDF files being delivered by the same manufacturer.
- i) Name PDF files using equipment description identifiers along with the "PDF" file name extension.

2) Use standard CD-ROM media.

3. Submittals to the Owner

- a. Two preliminary hard copies shall be submitted to the Owner no later than 15 days following favorable review of the Shop Drawings for the roofing system and at least 30 days prior to placement of the system.
- b. Submit for each Technical Specification section using a separate transmittal form. Submittal shall be complete for each specification section.
- c. One copy will be returned with review comments and corrections. Contractor shall make required corrections, provide additional data as required, and incorporate review comments.
- d. Provide two final hard copies and two electronic copies of the complete manuals at least 15 days prior to Final Inspection.

4. Contents, Each Volume

- a. Table of Contents: Provide title of project, names, addresses, and telephone numbers of Owner, subconsultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- b. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers; including local source of supplies and replacement parts.
- c. Product Data: Mark each sheet to clearly identify specific products and component parts and data applicable to installation. Delete inapplicable information.
- d. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- e. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.
- f. Warranties and Bonds shall be as specified in Section 01740.

1.09 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition and color, and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing, applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual product specifications.

E. Provide a listing in Table of Contents for design data, if provided by Contractor, with tabbed fly sheet and space for insertion of data.

1.10 INSTRUCTION OF OWNER'S PERSONNEL

A. Provide instruction for up to five (5) of the Owner's designated personnel by a competent representative of the roofing system manufacturer in the maintenance, inspection and proper records for warranty, and emergency repairs of installed roofing systems, at agreed upon times. Provide the Owner with a minimum of thirty (30) days notice for scheduling of training activities.

B. Provide a minimum six (6) hours of onsite demonstration of roofing systems maintenance and emergency repairs. It is the responsibility of the Contractor to schedule and arrange training of all plant shifts.

C. Use maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of maintenance and emergency repairs.

D. Prepare and insert additional data in Maintenance Manual when need for such data becomes apparent during instruction.

1.11 MANUFACTURER'S CERTIFICATE OF INSTALLATION

A. Submit three (3) copies.

B. When specified in Technical Specification section, submit manufacturers' certificate to Owner for review. Indicate material or product conforms to or exceeds specified requirements and provide supporting reference data. Certificates may be recent or previous test results on material or Product but must be acceptable to the Owner.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01560

TEMPORARY CONTROLS FOR ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 SCOPE

- A. This project is exempt from the California State Water Resources Control Board Construction Activities Storm Water General Permit No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ (NPDES No. CAS000002) (Permit), effective July 17, 2012, for the reasons stated below.
 - 1. The project will disturb less than one acre of land surface. Exempt from CA General Permit but covered by local municipal storm water permit.
- B. The project is subject to the current California Water Quality Control Board, North Coast Region Order No. R1-2015-0030 (NPDES No CA0025054) National Pollutant Discharge Elimination System Municipal Storm Water Permit, commonly referred to as the "Storm Water Permit". A copy of the Storm Water Permit is available for review at the City of Santa Rosa Transportation and Public Works Department, 69 Stony Circle, Santa Rosa, CA, and at www.srcity.org/stormwaterpermit.
- C. BMPs shall be selected, installed and maintained in accordance with the latest edition of The California Stormwater Quality Association Storm Water BMP Handbook for Construction (CASQA Handbook). A copy of the handbook can be viewed at the City of Santa Rosa Department of Transportation and Public Works office at 69 Stony Circle or downloaded from CASQA, <http://www.casqa.org/>.
- D. During the progress of the work, keep the work areas occupied by the Contractor in a neat and clean condition and protect the environment both onsite and offsite, throughout and upon completion of the construction project.

1.02 SUBMITTALS

- A. Develop an Environmental Protection Plan within thirty (30) days from the date of the Notice to Proceed. The Environmental Protection Plan shall include, but not be limited to, the following items:
 - 1. Copies of required permits.
 - 2. Proposed disposal site(s).
 - 3. Copy of Storm Water Permit Waiver application and approval letter.
- B. Distribute the favorably reviewed Environmental Protection Plan to all employees and to all subcontractors and their employees.

1.03 ENVIRONMENTAL IMPACT MITIGATION MEASURES

- A. Comply with all environmental mitigation measures that are included in the Contract Documents.
- B. Mitigation and Monitoring Requirements: Review and comply with the environmental impact mitigation and monitoring requirements listed in Table 1. Comply with all Federal, State and local regulations pertaining to environmental mitigation.

Table 1: Mitigation and Monitoring Requirements

| Environmental Factor | Mitigation and Monitoring Requirements |
|--|---|
| Air Quality | <ul style="list-style-type: none"> • Fugitive dust control BMPs • Vehicle emissions control BMPs • Measures preventing dust or dirt from entering air intakes for pump drives while still allowing adequate airflow. |
| Biological Resources | <ul style="list-style-type: none"> • Construction monitoring and temporary fencing |
| Construction Storage Areas | <ul style="list-style-type: none"> • Proper storage of materials |
| Fire Prevention | <ul style="list-style-type: none"> • Proper material storage • Provide fire extinguisher • Control ignition sources |
| Fish and Wildlife Resources | <ul style="list-style-type: none"> • BMPs to minimize fish and wildlife disturbances |
| Hazard & Hazardous Materials, Hydrology/ Water Quality | <ul style="list-style-type: none"> • Preparation of a Spill Prevention Control and Countermeasures (SPCC) Plan |
| Noise Control | <ul style="list-style-type: none"> • Follow local noise ordinances |
| Odor Control | <ul style="list-style-type: none"> • BMPs to minimize creation of nuisance odors |
| Revegetation of Disturbed Areas | <ul style="list-style-type: none"> • Follow tree and shrub planting guidelines |
| Sanitation | <ul style="list-style-type: none"> • Properly dispose of sanitary and construction wastes |
| Water Resources | <ul style="list-style-type: none"> • Follow applicable regulations to protect water resources on construction site including but not limited to erosion and sediment control |

1.04 MITIGATION AND MONITORING OF ENVIRONMENTAL FACTORS

- A. Requirements: All operations shall comply with all Federal, State and local regulations pertaining to water, air, solid waste, and noise pollution.
- B. Definitions of Contaminants:
 1. Sediment: Soil and other debris that have been eroded and transported by runoff water.
 2. Solid Waste: Rubbish, debris, garbage and other discarded solid materials resulting from construction activities, including a variety of combustible and non-combustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves and tree trimmings.
 3. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalies, herbicides, pesticides, disinfectants, organic chemicals and inorganic wastes. Some of the above may be classified as "hazardous."
 4. Sanitary Wastes:
 - a. Sewage: That which is considered as domestic sanitary sewage.
 - b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing and consumption of food.
- C. Protection of Natural Resources:
 1. General: The project facility is on a nature preserve. It is intended that the natural resources within the project boundaries and outside the limits of permanent work performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. Confine construction activities to areas defined by the public roads, easements, and work area limits shown on the Drawings. Return construction areas to their pre-construction elevations except where

- surface elevations are otherwise noted to be changed. Maintain natural drainage patterns. Conduct construction activities to avoid ponding stagnant water conducive to mosquito breeding.
2. Air Quality:
 - a. Employ measures to prevent the creation of air pollution.
 - 1) Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment, to eliminate dust formation.
 - 2) Store all volatile liquids, including fuels or solvents in closed containers.
 - 3) No open burning of debris, lumber or other scrap will be permitted.
 - 4) Properly maintain equipment to reduce gaseous pollutant emissions.
 3. Construction Storage Areas:
 - a. Storage of construction equipment and materials shall be limited to the designated Contractor's storage area.
 - b. Store and service equipment at the designated Contractor's storage area. No dumping of surplus concrete or grout on the site will be permitted.
 - c. Per Stockpile Management/CASQA Stockpile Management (BMP WM-3): Do not block storm water flows with equipment or materials.
 4. Fire Prevention: Take steps to prevent fires including, but not limited to the following:
 - a. Provide spark arrestors on all internal combustion engines.
 - b. Store and handle flammable liquids in accordance with the Flammable and Combustible Liquids Code, NFPA 30.
 - c. Provide fire extinguishers at hazardous locations or operations, such as welding.
 5. Fish and Wildlife Resources: The Contractor shall not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area which are critical to fish and wildlife except as may be indicated or specified.
 6. Hazards:
 - a. Oil wastes shall not be allowed to flow onto the ground or into surface waters. Containers shall be required at the construction site for the disposal of materials such as paint, paint thinner, solvents, motor oil, fuels, resins and other environmentally deleterious substances.
 7. Land Resources:
 - a. Do not remove, cut, deface, injure or destroy trees or shrubs outside the work area limits. Do not remove, deface, injure or destroy trees within the work area without permission from the Engineer or unless noted on the Drawings.
 - b. Temporary Construction: Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction as directed by the Engineer. Level all temporary roads, parking areas and any other areas that have become compacted or shaped. Any unpaved areas where vehicles are operated shall receive a suitable surface treatment or shall be periodically wetted down to prevent construction operations from producing dust damage and nuisance to persons and property, at no additional cost to the Owner. Keep haul roads clear at all times of any object that creates an unsafe condition. Promptly remove any contaminants or construction material dropped from construction vehicles. Do not drop mud and debris from construction equipment on public streets. Sweep clean turning areas and pavement entrances as necessary.

8. Noise Control: The following noise control procedures shall be employed:
 - a. Maximum Noise levels for trucks shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For all other equipment, noise levels shall not exceed 85 dBA at 50 feet.
 - b. Equipment: Air compressors should be of a quiet type such as a "whisperized" compressor.
 - c. Operations: Machines should not be left idling. Use electric power in lieu of internal combustion engine power wherever possible. Maintain equipment properly to reduce noise from excessive vibration, faulty mufflers, or other sources. All engines shall have properly working mufflers.
 - d. Scheduling: Schedule noisy operations so as to minimize their duration at any given location.
9. Odor Control: Employ measures to prevent the creation of odors.
 - a. Store all volatile liquids, including fuels or solvents in closed containers.
 - b. No open burning of debris, lumber or other scrap will be permitted.
 - c. Properly maintain equipment to reduce gaseous pollutant emissions.
10. Revegetation of Disturbed Areas:
 - a. Tree and Shrubs Replacement: Replace trees and shrubs damaged by the construction or as noted on the Drawings after completion of earthwork in the area. Plant nursery stock of the same species and variety, in 5-gallon cans on a one-for-one basis. Plant in the early Fall. If planting is not feasible in early fall, the Engineer will reschedule the tree planting operations.
 - b. Planting of Trees and Shrubs:
 - 1) Selection: Deliver trees and shrubs to the site in the nursery containers, with the nursery tags identifying the species and variety. The trees and shrubs should be selected for shape and symmetrical branching habit, which at maturity will produce strong, full foliated specimens. The specimens shall have grown in the designated size of container for a sufficient length of time for the root system to hold the earth when taken from the container, but not long enough to become rootbound or cause a "hardening off" of the root system. Specimens which are loose in the root ball will be rejected. Remove all rejected specimens from the site and replace with specimens as specified. Specimens shall be sound, healthy, vigorous and free from insects, pests, plant diseases and injuries.
 - 2) Protection: Specimens which cannot be planted within one (1) day of delivery shall be properly protected and kept moist to prevent drying.
 - 3) Planting Procedure: Planting hole shall be twice the width of the root ball and at least one and one-half times the height of the root ball. Fill the planting hole with water and let drain away. Mix excavated soil with a planting mix appropriate for the type and condition of the soil and the species of tree or shrub and place the mixed soil in the planting hole to the depth necessary to bring the root ball slightly higher than the surrounding soil. Remove the specimen from the container carefully so that the root ball remains unbroken. Place in planting hole and fill with mixed soil to one-half the height of the root ball, tamp thoroughly, then water. Set specimens at such a level that after settlement the top of the root ball is level with the surrounding finish grade. Add mixed soil to form watering basin, fill basin twice with water immediately after planting. Water plantings as frequently as required to keep the

- specimens adequately moist until well established. The Contractor will be responsible for maintaining specimens for a minimum of one (1) year after final acceptance or planting, whichever is later.
- 4) Staking: Use 2 inch x 2 inch redwood or cedar stakes of length adequate to support each tree. Drive a stake on each side of each specimen outside of the root ball, to a depth of 3 feet. Support tree to stakes using twisted galvanized wire covered with reinforced rubber hose where in contact with the specimen.
 - 5) Mulching: Fill all watering basins of trees and shrubs with a layer of mulch not less than 2 inches thick
11. Sanitation: During the construction period, provide adequate and conveniently located chemical sanitation facilities with secondary containment, properly screened, for use of construction crews, the Engineer and visitors to the site.
- a. Per Sanitary and Septic Waste/CASQA Sanitary and Septic Waste Management (BMP WM-9): Sanitation facilities must be maintained periodically by a licensed service to keep them in good working order and prevent overflows.
12. Water Resources: Comply with all applicable Federal, State and local regulations concerning the discharge (directly or indirectly) of pollutants to the underground and natural waters.
- a. As indicated in Section 1.01 A, this project is exempt from the CA Construction General Permit. However, the following minimum erosion and sedimentation Best Management Practices (BMPs) shall be considered and implemented to minimize the potential for impacts to water resources: Exercise every reasonable precaution to protect streams, lakes, reservoirs, bays and coastal waters from pollution with fuels, oils, bitumens, calcium chloride and other harmful materials and conduct and schedule operations so as to avoid or minimize muddying and silting of said streams, lakes, reservoirs, bays and coastal waters.
 - 1) Water pollution control work is intended to provide prevention control and abatement of water pollution to streams, waterways and other bodies of water, and shall consist of constructing those facilities that may be shown on the Drawings, specified herein, or directed by the Engineer.
 - b. Submit a plan to control water pollution effectively during construction of the Work. Such program shall show the schedule for the erosion control work included in the Contract and for all water pollution control measures, which the Contractor proposes to take in connection with construction of the project to minimize the effects of his operations upon adjacent streams and other bodies of water. The Contractor shall not perform any clearing and grubbing or earthwork on the project, other than that specifically authorized in writing by the Engineer, until such plan has been accepted. The Contractor may request the Engineer to waive the requirement for submission of a written plan for control of water pollution when the nature of the Contractor's operation is such that erosion is not likely to occur. Waiver of this requirement will not relieve the Contractor from responsibility for compliance with the other provisions of this Section. Waiver of the requirement for a written plan for control of water pollution will not preclude requiring submittal of a written plan at a later time if the Engineer deems it necessary because of the effect of the Contractor's operations.
 - c. Implement the following Erosion and Sediment Transport Controls:
 - 1) Keep disturbed areas to the minimum necessary for construction.

- 2) Trap sediment before it leaves the site, using BMPs such techniques as straw wattles, check dams, sediment ponds, or siltation fences.
 - 3) Provide erosion and sediment transport control measures and materials on-site and ready for implementation prior to the onset of the first major storm of the season or subsequent storms.
 - 4) Stabilize disturbed areas as quickly as possible.
 - d. Coordinate erosion and sedimentation BMPs with all other work.
 - e. If the measures being taken by the Contractor are inadequate to control water pollution effectively, the Engineer may direct the Contractor to revise its operations and its water pollution control program. Such directions will be in writing and will specify the items of work for which the Contractor's water pollution control measures are inadequate. No further work shall be performed on said items until the water pollution control measures are adequate; and if also required, a revised water pollution control plan has been accepted.
 - f. Per Spill Prevention and Control/CASQA Spill Prevention and Control (BMP WM-4): If a spill occurs at the construction site and the contractor does not take immediate and adequate steps to contain and clean up the spill, especially if rain is threatening or if a discharge to a storm drain or creek could occur, the City shall have the right, in its sole and absolute discretion, to clean up the spill using City forces or an independent contractor. The cost of any such cleanup, in addition to recovery of any penalty of fine imposed upon the City, plus an administrative charge of fifteen percent (15%) of the costs incurred by the City, shall be deducted from any amounts owed to Contractor hereunder. In the event there are insufficient amounts owed to Contractor hereunder to cover the foregoing costs and charges, the City shall have the right to pursue any other remedy to recover same, including but not limited to, proceeding against any surety or bond in favor of the City. The City's 44 C02285 rights under this section are intended to be in addition to and not in lieu of any imposed by the City against Contractor for violations of City Code Chapter 17-12, "Storm Water".
 - g. Nothing in the terms of the Contract nor in the provisions in this Section shall relieve the Contractor of the responsibility for compliance with Sections 5650 and 12015 of the California Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.
 - h. The Contractor shall also conform to the following provisions:
 - 1) Portland cement or fresh Portland cement concrete shall not be allowed to enter flowing water of streams.
 - i. Chlorinated Water: Take special measures to prevent chlorinated water from entering the ground or surface waters. Dechlorinate chlorinated water prior to discharge.
- D. Execution: Training.
1. Provide pre-construction training to ensure staff is aware of project specific environmental impacts
 2. Provide weekly training to review staff awareness of environmental factors
 3. Ensure photographic and ongoing compliance documentation is acquired and properly kept.

1.05 DISPOSAL OPERATIONS

A. Solid Waste Management:

1. Daily remove all trash, rubbish, and waste materials of any kind generated by the contractor, subcontractor, or any company hired by the contractor. Take care to prevent trash and papers from blowing onto adjacent property. Encourage personnel to use refuse containers. Convey contents to a sanitary landfill.
- B. Chemical Waste and Hazardous Materials Management: Furnish containers for storage of spent chemicals used during construction operations. Dispose of chemicals and hazardous materials in accordance with applicable regulations.
- C. Dispose of vegetation, weeds, rubble, and other materials removed by the clearing, stripping and grubbing operations off site at a suitable disposal site in accordance with applicable regulations.
- D. Definitions and Abbreviations:
 1. BMP - Best Management Practice
 2. Contractor - The person or persons, firm, partnership, corporation or combination thereof, private or municipal, who enters into the Contract with the Owner to construct the project. The Contractor shall also assume responsibility of the Environmental Impact Mitigation Measures, including having the responsibility to ensure full compliance with and implementation of all its elements, including the preparation of revisions, preparation of any applicable inspection reports and elimination of all unauthorized discharges.
 3. Permit - National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ), NPDES No. CAS000002 adopted and made effective on 17 July 2012.
- E. The Contractor shall incorporate the actual construction means and methods to be employed to be in compliance with the Environmental Impact Mitigation Measures.
- F. The Contractor will be responsible for amending, implementing, and maintaining the Environmental Impact Mitigation Measures, as necessary.

1.06 SURFACE WATER DISCHARGES PERMIT REQUIREMENTS

- A. Contractor shall discharge stormwater and dispose of dechlorinated water from the construction activities under the **Owner's existing NPDES Limited Threat Discharge Permit for Maintenance.**

PART 2 - PART 2 - PRODUCTS (NOT USED)

PART 3 - PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 FINAL CLEANUP

- A. Prior to Final Inspection, the Contractor shall clean the entire construction area and all other areas affected by the performance of work under this Contract. Perform cleaning using personnel specializing in and skilled in cleaning and maintenance work. Perform repair work using personnel skilled in executing the type of work being repaired. Perform all work to the highest trade standards applicable to that type of work.
1. Remove all temporary construction, signs, tools, equipment, excess material and debris.
 2. Remove all lumps, splatters, spots and stains caused by paint, adhesive, asphalt, concrete, mortar, sealant or other foreign material from exposed or finished surfaces. Remove all temporary labels.
 3. Repair, patch or replace new or existing work including pavement, sidewalks, curbs, gutters, catch basins, gratings, manholes, covers, landscaping, plant materials and other items that have been damaged, broken, cracked or chipped as a result of performing this Work.
 4. Sweep clean and wash down all exterior pavement surfaces. Remove all hazardous material and material that may cause sediment in drainage systems prior to washdown. Remove all grease and oil stains on pavement caused by Contractor's equipment.
 5. Restore any trees, bushes, boulders, or other natural elements that have been disturbed to their original state.
 6. Repair or patch any parts of the access road between Pine Flat Rd and the site that have been damaged as a result of performing this work.

1.02 CONTRACTOR'S ACTION LIST OF ITEMS TO BE CORRECTED AND/OR COMPLETED

- A. During construction, the Contractor shall maintain an action list of items to be corrected and/or completed. Regularly add items and update the list as information becomes available or as requested by the Engineer. Deliver a current copy of the list to the Engineer at each progress meeting.

1.03 SEMIFINAL INSPECTION/SUBSTANTIAL COMPLETION

- A. See also General Conditions. When the Contractor considers the Work nearly complete, the Contractor shall review the Contract Documents, inspect the Work, and use the Contractor's action list to prepare a Contractor's Punch List of all deficient or uncompleted items. Complete or correct the items on the Punch List. When the Work is Substantially Complete in accordance with General Conditions, notify the Engineer in writing that the Contractor has reviewed the Contract Documents, inspected the Work and believes that the Work is Substantially Complete and ready for Semifinal Inspection.
- B. See also General Conditions. On receipt of the Contractor's Punch List and notice that the work is ready for Semifinal Inspection, the Engineer will inspect the Work. The Engineer may add additional items to the Contractor's Punch List, may find that the Work is not ready for inspection, may find that the Work is ready for inspection but not Substantially Complete or may find that the Work is Substantially

Complete. When the Engineer finds the Work is Substantially Complete, he/she will prepare a Final Punch List and a notice of Substantial Complete, which will state the date of Substantial Completion and the time agreed to by the Owner and the Contractor (not to exceed 30 calendar days) in which the Work shall be fully complete and ready for Final Inspection.

1.04 FINAL INSPECTION, FINAL COMPLETION AND FINAL PAYMENT

- A. See also General Conditions. When the Contractor has completed or corrected all the items on the Engineer's Final Punch List, the Contractor shall give the Engineer written notice that the Work is ready for Final Inspection. When the Engineer finds the Work acceptable and fully complete in accordance with the Contract Documents, and upon receipt of a final Application for Payment and all final submittals, the Engineer will recommend that the Owner issue a Notice of Final Completion, make Final Payment and Accept the Work stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's observations and inspection, the Work has been fully completed in accordance with the terms and conditions of the Contract Documents.
- B. Final Submittals include:
 - 1. Operation and Maintenance Manuals and Parts Lists
 - 2. Record Drawings
 - 3. Extra Materials
 - 4. Special Guarantees
 - 5. Insurance Certificate showing required continuation of coverage beyond Final Payment. See also General Conditions.
 - 6. Release of Liens. See also General Conditions.
 - 7. Waiver of Claims by Contractor. See also General Conditions.
 - 8. And any other submittals required by the Contract Documents and not previously received.
- C. The Owner will record the Notice of Final Completion at the County Recorder Office.
- D. The Owner will make Final Payment to the Contractor 35 calendar days after recording the Notice of Final Completion.

1.05 RECORD DRAWINGS

- A. The Contractor shall maintain on the jobsite, a complete set of Contract Documents and a complete file of all addenda, contract modifications and favorably reviewed submittals. The Contractor shall prepare a set of Record Drawings concurrently with the construction of the Work and in accordance with the General Conditions and the following:
 - 1. Comply with detailed requirements in technical specification sections describing the type of information required on Record Drawings. The Contractor's copy of Contract Documents, Contract modifications and Record Drawings shall be available to the Engineer for weekly verification that the records are being currently updated.
- B. Submit Record Drawings and obtain acceptance prior to completion.

1.06 EXTRA MATERIALS

- A. Deliver specified extra materials and parts to Owner. Itemize all items on a transmittal letter in duplicate and obtain signature of receiving party. Submit copies of signed transmittals for all specified extra materials and parts prior to completion.

1.07 SPECIAL GUARANTEES

- A. The General Conditions cover the Contractor's responsibility to remedy defects due to faulty workmanship and materials, which appear within one (1) year from the date of Final Completion and acceptance by the Owner.
- B. Guarantees for more than one (1) year when called for in various sections of the Specifications shall be evidenced by the Contract Documents and in the form of a special guarantee written on the letterhead of the Contractor, subcontractor, or supplier doing the work and/or supplying the item to be guaranteed, and countersigned by the Contractor as follows. Failure to provide the special guarantee on the letterhead shall not relieve the Contractor, subcontractor, or supplier from its obligations for the special guarantees.

C. Special Guarantee:

We hereby guarantee that the _____ which we have provided in the _____, Project, was done in accordance with the Drawings and Specifications, and that the work, as installed, will fulfill the requirements of the guarantee included in Specification Section _____. We agree to repair or replace any or all of our work, together with any other adjacent work which may be damaged or displaced by so doing, that may prove to be defective in workmanship or material (with the exception of defects due to ordinary wear and tear, and unusual abuse or neglect) within a period of _____ years from the date of acceptance of the abovenamed facility, without any expense whatsoever to the Owner. In the event of our failure to comply with the above-mentioned conditions within the period set forth the General Conditions after being notified in writing by the Owner, we, collectively or separately, do hereby authorize the Owner to proceed to have said defects repaired and made good at our expense, and we will honor and pay the costs and charges therefore upon demand. We understand that the provisions of General Conditions apply to this Special Guarantee.

Signed _____
(Subcontractor or Supplier)

Company _____

Address _____

Telephone Number _____

Countersigned _____
(Contractor)

- D. Submit two (2) notarized original signed copies of each required Special Guarantee prior to completion.

1.08 TWELVE-MONTH INSPECTION

- A. Thirty (30) days prior to the expiration of the one-year guarantee period described in General Conditions, the Contractor shall tour the project with the Engineer and/or the Owner to prepare a list of corrective work required under the one-year guarantee. The Contractor shall correct all items found to be defective within 20 days of receipt of the list of items to be corrected.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01740
WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1.02 RELATED WORK

A. Refer to General Conditions for the general requirements relating to warranties and bonds.

B. General closeout requirements are included in Section 01700 Contract Closeout.

C. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections of Division 2 through 9.

D. Refer to the Attachments for information on the manufacturer's warranty for the Owner Furnish Contractor Installed equipment.

1.03 SUBMITTALS

A. Submit all warranty information in draft form within 15 days from Notice-to-Proceed.

B. Submit written warranties to the Owner prior to the date for Substantial Completion or upon Request of the Owner. Commencement dates for the Warranties shall begin when the Owner has beneficial use of the equipment covered by each warranty.

C. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Owner within 15 days of completion of that designated portion of the Work.

D. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner for approval prior to final execution.

E. Refer to individual Sections of Divisions 2 through 9 for specific content requirements, and particular requirements for submittal of special warranties.

1.04 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.

B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.

D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

E. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the contract Documents.

F. The Owner reserves the right to refuse to accept work for the project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

G. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

H. Contractor shall supply a comprehensive warranty with a minimum period of one year on all construction, equipment, instrumentation, piping, appurtenances, fabrication work, and the operation of the system and all system components of this project. Longer periods for specific equipment shall be as specified in the technical specifications.

1.05 MANUFACTURERS' CERTIFICATIONS

A. Where required, the Contractor shall supply evidence, satisfactory to the Owner, that the Contractor can obtain manufacturers' certifications as to the Contractor's installation.

1.06 DEFINITIONS

A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 07530

POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Fully adhered KEE (Ketone Ethylene Ester) enhanced single-ply polyvinyl chloride (PVC) Roofing membrane, cover board, membrane flashings, rigid insulation, air and vapor barrier, torch-grade SBS base ply sheet, pressure treated wood nailers, adhesives, and all other necessary materials and fasteners for a complete watertight, single-ply roofing system.

1.02 REFERENCES

A. ASTM International (ASTM):

1. D4434 / D4434M 12 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
2. D412 Test Method for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers
3. D570 Test Method for Water Absorption of Plastics
4. D573 Test Method for Rubber - Deterioration in an Air Oven
5. D751 Test Method for Coated Fabrics
6. D1004 Test Method for Initial Tear Resistance (Graves Tear) of Plastic Film and Sheeting
7. D1149 Test Method for Rubber Deterioration - Surface Ozone Cracking in a Chamber
8. D1203 Test Method for Volatile Loss from Plastics Using Activated Carbon Methods
9. D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
10. D2136 Test Method for Coated Fabrics - Low Temperature Bend Test
11. D2240 Test Method for Rubber Property - Durometer Hardness
12. D3045 Practice for Heat Aging of Plastics Without Load
13. D7635 / D7635M Test Method for Measurement of Thickness of Coatings Over Fabric Reinforcement
14. G90 Practice for Performing Accelerated Outdoor Weathering of Nonmetallic Materials Using Concentrated Natural Sunlight

B. American Wood Preservers Association (AWPA):

1. C1-C4, C9, C14-16, C22-C24, C28 and M4 - Preservative Treatment by the Pressure Process and Quality Control Standards

C. Factory Mutual Insurance Company (FM Global) Property Loss Prevention Data Sheets:

1. 1-28 Wind Design
2. 1-29 Roof Deck Securement and Above-Deck Roof Components
3. 1-49 Perimeter Flashing

- D. Underwriters Laboratories, Inc. (UL):
1. UL 790 Test Standard for Determining the Fire Retardancy of Roof-Covering Materials.

1.03 SYSTEM DESCRIPTION

- A. This Specification is intended to cover a single-ply KEE enhanced PVC roofing system designed and recommended by the materials manufacturer for 30 years or more of service for this specific application. Provide a system that is a complete functioning unit including all related substrate preparation, attachment of components to the substrate, boundary conditions, flashings, penetrations, roof and overflow drains, roof hatches and scuttles and parapet caps. Design and install an FM Approved roof assemblies according to the RoofNav database and per FM Global Property Loss Prevention Data Sheets 1-28, Wind Design; and 1-29, Roof Deck Securement for Above-Deck Roof Component.

1.04 FM GLOBAL APPROVED ASSEMBLIES

- A. Assembly # 364660-0-0 (Components from top-down) (To be used at areas of concrete roof structure):
1. Cover (Single-Ply): Sure-Flex PVC KEE HP Membrane
 2. Securement (Cover – 1) to Cover Board: Low VOC PVC Bonding Adhesive
 3. Cover Board: SecurShield HD Plus
 4. Securement from Cover Board to Insulation: FAST Bag in a Box Adhesive
 5. Insulation (Board Stock): Polyiso HP-H
 6. Self-Securement: FAST Bag in a Box Adhesive
 7. Securement from Insulation Board to Vapor Retarder: FAST Bag in a Box Adhesive
 8. Vapor Retarder: VapAir Seal 725TR
 9. Securement from Vapor Retarder to Concrete Deck: Self-adhered
 10. Substrate Primer: Carlisle 702 LV Primer.

1.04 SUBMITTALS

- A. Product Data: Fully describe every product or item proposed for use.
- B. Samples (minimum 5-in by 5-inch in size for sheet goods): Elastomeric membrane in thickness and colored specified; cover board, rigid insulation, air and vapor barrier, base ply sheet fasteners, and adhesives.
- C. Manufacturer's review of specified system including details and all conditions, written comments and recommendations together with written agreement that all aspects of specified system as shown or as modified by a clarification or change order issued as a result of the manufacturer's recommendations are compatible with the intended use and that the system specified will perform its function and fulfill the manufacturer's warranty requirements.
- D. Manufacturer's Request for Warranty indicating specified 30-year warranty.
- E. Shop drawings must also be submitted by the Authorized Roofing Applicator to the manufacturer, along with a completely executed Notice of Award for approval. Approved shop drawings must include:
1. Outline of roof and size
 2. Deck type (for multiple deck types)

3. Location and type of all penetrations
 4. Perimeter and penetration details
 5. Sheet width and number of perimeter sheets.
- F. When field conditions necessitate modifications to originally approved shop drawings, a copy of the shop drawing outlining all modifications must be submitted to the manufacturer for revision and approval prior to inspection and warranty issuance.
- G. After project completion, submit a Notice of Completion manufacturer to schedule the necessary inspection of the project prior to issuance of the Warranty.

1.05 QUALITY ASSURANCE

- A. Qualifications:
1. Manufacturer Qualifications: A company having at least ten (10) years' experience in the specialized manufacture of KEE (Ketone Ethylene Ester) enhanced single-ply polyvinyl chloride (PVC) roofing membrane as specified herein.
 2. Installer Qualifications: An experienced installer having at least five (5) years' experience installing roofing systems and assemblies similar in material, design, and extent to those indicated.
 - a. Qualifications: This roofing system must be installed by the manufacturer's Authorized Roofing Applicator in compliance with these Drawings and Specifications as approved by the manufacturer. Employees of the Authorized Roofing Applicator shall similarly have manufacturer-approved training and experience in the handling and installation of the roofing system and its components. Provide assemblies that meet the recommendation of the manufacturer for a 30-year guarantee. A 30 year bond is NOT required.
- B. Regulatory Requirements: Comply with California Building Code (CBC), 2019 edition, especially Chapter 15, and all applicable State and Local amendments.
- C. Roofing shall meet the requirements of UL 790 "Standard for Standard Test Methods for Fire Tests of Roof Coverings" for Class A rating.
- D. Comply with Factory Mutual Insurance Company Standards for wind design (1-28), roof deck securement and above-deck roof components (1-29) and perimeter flashings (1-49).
- E. In submitting a bid on this work, the Contractor, the installer and the roofing materials manufacturer each certifies:
1. That they have reviewed these specifications and drawings and understand the intended use of the products and systems specified in this Section.
 2. That they recognize that these specifications and the related drawings are based on representations made by the materials manufacturers.
 3. And that in the absence of a written statement to the contrary received prior to opening of bids they agree that the Specifications and Drawings correctly describe a roofing system that will perform as intended.
- F. During installation, there must be no deviations made from manufacturer's specifications or manufacturer's approved shop drawings without the PRIOR WRITTEN APPROVAL of the manufacturer.
- G. After completion of the installation, an inspection shall be conducted by a Field Service Representative (FSR) of the manufacturer to ascertain that the membrane roofing system has been installed according to the manufacturer's published

specifications and details applicable at the time of bid. This inspection is to determine whether a warranty shall be issued.

1.06 WARRANTY

- A. Provide manufacturer's 30-year warranty in compliance with their requirements for underlayment, insulation, and attachment assemblies for fully-adhered PVC KEE roofing systems.

1.07 GUARANTEE

- A. Provide a written guarantee in accordance with Section 01 70 00 signed by the roofing manufacturer, roofing subcontractor and the general contractor extending the standard 1-year guarantee to a period of 2 years for work done under this Section. The guarantee shall:
 - 1. Provide for the repair or replacement of work provided or installed under this Section that leaks or shows other signs of failure.
 - 2. Provide for the repair or replacement of adjoining work necessitated by the above.
 - 3. Provide for the repair or replacement of any other portions of the entire work covered by this contract that are damaged as a result of leaks or other failure of work covered under this Section.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original unopened containers and rolls with labels intact and legible.
- B. Protect materials from damage during transit, handling, storage and installation.
- C. Provide continuous protection of substrate and underlayment materials against wetting and moisture absorption. Do not use any materials that have become wet or damp. Protect incomplete membrane edges and flashings against water entry so that they remain watertight for an extended period if inclement weather occurs.
- D. Select and operate material handling equipment so as not to damage existing construction or applied roofing. Do not stack materials beyond the design live load of the structure.
- E. Do not store adhesive containers with opened lids due to the loss of solvent that will occur from flash-off.
- F. Insulation/underlayment must be stored so that it is kept dry and is protected from the elements. Store insulation on a skid and completely cover with a breathable material such as tarp or canvas. If the insulation is lightweight, it should be weighted to prevent possible wind damage.
- G. Comply with manufacturer's recommendations for methods of handling and storing materials.

1.09 PROJECT CONDITIONS

- A. Environmental
 - 1. Apply in dry weather; do not apply in rain or foggy conditions.
 - 2. Minimum ambient air temperature: 45°F.
 - 3. Maximum ambient air temperature: 80°F.
 - 4. Apply when wind velocity is less than 10 mph.
- B. Hazardous Operations: The Contractor is advised that hazardous conditions may be encountered performing this work. Respiratory, skin, and/or eye irritation is possible due to processing vapors when heated sufficiently to cause mass melting

of the polymer, such as during heat welding. Sunglasses that filter ultraviolet light are strongly recommended as membrane surfaces can be highly reflective to sunlight. Roofing Technicians should dress appropriately and wear sunscreen protection. The Contractor shall advise his employees of the potential hazards, shall supply all required protective and safety equipment, and shall comply with all applicable State and Federal safety regulations (OSHA).

- C. Do not install the Roofing Membrane in direct contact with any product containing asphalt or coal tar pitch.
- D. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat, etc.) or direct steam venting to come into direct contact with the Roofing Membrane. Contact the manufacturer for installation details, if such conditions exist. See also manufacturer's Technical Data Sheet and Material Safety Data Sheet for additional restrictions and/or hazards associated with the roofing membrane system.
- E. Coordination
 - 1. Coordinate with other sections of the Specifications to ensure that work related to roofing is included.
 - a. Ensure that wood stops, nailers and curbs are properly sized, spaced and fastened.
 - b. Ensure that reglets and copings that are an integral part of the roofing are properly installed.

PART 2 - PRODUCTS

2.01 ROOFING SYSTEM

- A. Manufacturer: The roofing system and all of the related products described in this Specification are Carlisle SynTec Systems, Sure-Flex KEE HP Membrane Single-Ply fully-adhered total roofing system; or equal.
- B. The system described establishes the quality level desired. Carlisle SynTec Systems is the basis of design. Other systems may be submitted for evaluation and if found equivalent, will be favorably reviewed. Provide the membrane in one of five standard colors.
- C. Use only products in the roofing system that are made or recommended by the manufacturer of the roofing system.

2.02 ROOFING MEMBRANE

- A. Membrane: Sure-Flex KEE HP 80 mil PVC Polyester Reinforced Membrane Single-Ply is an ASTM D 4434-04, Type III polyester-scrim fabric reinforced, compounded resin based sheet with plasticizers, stabilizers, fillers, pigments and other proprietary materials, manufactured in a nominal 80 mil thickness, includes an anti-wicking polyester scrim, provides a 30-year material warranty (enhanced warranties available for qualified applicators) and conforming to the following minimum physical properties:

| Physical Property | Test Method | Specification |
|--|------------------------|---------------------|
| Overall Thickness of sheet min. mm (in.) | ASTM D-751 | 2.03 (0.08) |
| Thickness over the scrim, min. mm (in.) | ASTM D-751 | 1.02 (0.036) |
| Breaking strength, minimum (lbs) | ASTM D-751 Grab Method | 275 min. / 300 typ. |
| Tear strength, minimum (lbf) | ASTM D-751 Tongue Tear | 50 min. / 100 typ. |
| Low temperature bend, 1/8 in. mandrel | ASTM D-2136 | -40°F (-40°C) Pass |

| Physical Property | Test Method | Specification |
|--------------------------------------|-------------|---------------|
| Weight/Density (oz/yd ²) | ASTM D-751 | 73.0 |
| Static Puncture Resistance | ASTM D5602 | Pass |
| Dynamic Puncture Resistance | ASTM D5636 | Pass |
| Linear dimension change, max % | ASTM D1204 | 0.5 |

2.03 RELATED MATERIALS

- A. Bonding Adhesive: Low-VOC PVC Bonding Adhesive: A high-strength solvent based adhesive that allows bonding of PVC and KEE-enhanced PVC membrane to various porous and non-porous substrates. Adhesive is applied to both the membrane and the substrate at a coverage rate of approximately 60 square feet per gallon per finished surface (includes coverage on both surfaces).
- B. Substrate Primer: Carlisle 702 LV Primer: Single component, solvent based, high tack primer used to provide maximum adhesion between vapor barrier and approved substrate. Apply per manufacturer's recommendations.
- C. Water Cut-Off Mastic: To prevent moisture migration at drains, compression terminations and beneath conventional metal edging. Coverage rate of approximately 10 feet per tube or 100 feet per gallon.
- D. Universal Single-Ply Sealant: 100% solids, solvent free, VOC free, one part polyether sealant. White; for use at general caulking such as above termination bars and metal counter flashings and at scuppers.
- E. White One-Part Pourable Sealer: One-part, moisture curing, elastomeric polyether sealant used to fill Molded Pourable Sealant Pockets.
- F. PVC Membrane Cleaner: Used to prepare membrane for heat welding that has been exposed to the elements or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).
- G. Insulation Board Adhesive:
 - 1. FAST 100 LV or Flexible FAST Adhesive: Spray (full coverage) or bead-applied, two-component polyurethane, construction grade, low-rise expanding foam adhesive used for attaching approved insulations to compatible roof decks or smooth cap sheets, substrate at a coverage rate of approximately 60 square feet per gallon per finished surface (includes coverage on both surfaces).
- H. Sure-Flex PVC Cut-Edge Sealant: A clear-colored sealant used to seal cut edges of reinforced Sure-Flex membrane. Coverage rate of approximately 225 to 275 linear feet per squeeze bottle at 1/8 inch diameter bead.

2.04 INSULATION BOARD AND COVER BOARD

- A. Insulation Board: Rigid extruded high-density polystyrene insulation board in accordance with the manufacturer's recommendations. Provide 1-1/2-inch minimum total thickness with a min. R value of 5.7 per inch. Provide tapered shapes for crickets and at drains. Carlisle HPH Polyiso or equal.
- B. Cover Board: A rigid insulation panel composed of a high-density (100 psi), closed-cell polyisocyanurate foam core laminated to coated-glass fiber-mat facer for use as a cover board or recover board. Available 1/2-inch thick, 4-foot by 8-foot panel, weight 11 lbs with an R-value of 2.5. Carlisle SecurShield HD, HD Plus or equal.

2.05 FLASHING

- A. Material: Sure-Flex Flashing by Carlisle.
 - 1. Sure-Flex PVC non-reinforced Flashing, 80-mil (color to match membrane). Flashing is used for inside/outside corners and field fabricated pipe flashings when use of pre-molded accessories is not feasible.
 - 2. Sure-Flex PVC "T" Joint Cover: 4-1/2-inch diameter, 40-mil thick, injection molded PVC flashing used to overlay "T" joints at field splices of 80-mil Sure-Flex PVC membrane.
 - 3. Pre-Molded Accessories:
 - a. Sure-Flex PVC Inside Corner Flashing: 80 mil. (color to match membrane).
 - b. Sure-Flex PVC Outside Corner Flashing: 80 mil. (color to match membrane).
 - c. Sure-Flex PVC Pipe Flashings: For pipe penetrations, available for 3/4-inch to 8-inch diameter pipes with clamping rings included.
 - d. Sure-Flex PVC Split Pipe Seals: 60-mil thick reinforced Sure-Flex Membrane for pipes 1-inch to 6-inch in diameter. Split (cut) and overlapped tab incorporated to allow the seal to be opened and wrapped around the pipe.
 - e. Sure-Flex PVC Square Tubing Wraps: 60-mil thick reinforced Sure-Flex Membrane for square tubing. Split (cut) and overlap tab incorporated to allow the seals to be opened and wrapped around a square penetration. Available for 3-inch, 4-inch, and 6-inch diameter square tubing. Color to match membrane.
 - f. Sure-Flex PVC Molded Sealant Pockets: Interlocking, 2-piece, injection molded, flexible pocket with a rigid PVC vertical wall and pre-formed deck flanges. Used in conjunction with PVC One-Part Pourable Sealer for waterproofing pipe clusters or other odd shaped penetrations. Color to match membrane.

2.06 VAPOR / AIR BARRIER

- A. At existing concrete deck: VapAir Seal 725TR; or equal.

2.07 NAILERS AND SPACERS

- A. Nailers and Spacer Strips: Install and place as required by Roofing System manufacturer and as shown on Drawings, Douglas fir, pressure treated in accordance with applicable AWPA standards (see 1.02B of this Section) and complying with the requirements of Section 06100. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19% by weight on a dry-weight basis.

2.08 METAL ACCESSORIES, EDGINGS, COPING AND TERMINATIONS

- A. Sure-Flex PVC Coated Metal: 24-gauge, galvanized steel sheet coated with a layer of 40-mil non-reinforced Sure-Flex Flashing. Cut to the appropriate width and used to fabricate metal drip edges or other roof perimeter edging profiles.
- B. SecurWeld™ Heat-Weldable Drip Edge: Pre-fabricated PVC-coated metal edging.
- C. SecurEdge 2000 Standard Fascia: Anchor bar roof edge fascia system consisting of heavy 0.1-inch thick extruded aluminum bar, corrosion resistant stainless-steel fasteners and snap-on fascia cover.

- D. Termination Bar: 1 inch wide and 98-mil thick extruded aluminum bar pre-punched 6 inches on center with a sealant ledge to support Lap Sealant.

2.09 ROOF WALKWAYS

- A. Sure-Flex PVC Heat Weldable Walkway Rolls: Manufactured from specially compounded PVC, with tear, puncture and weather resistance. Walkway material may be heat welded to Sure-Flex membrane using an automated heat welder or hand-held heat welder. Walkway Rolls are 36 inches wide by 60 feet long and are nominal 80-mil thick. Available in gray only.

PART 3 - EXECUTION

3.01 GENERAL

- A. Coordinate the installation so that each area is made watertight at the end of each work period. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals. Provide water cut-offs by extending the membrane beyond the underlayment and securely setting the edge of the membrane into a 6-inch-wide band of water base cement recommended by the roofing manufacturer and placing weights in the adhered edge to prevent displacement. Remove cut-offs prior to the start of the next work period by cutting off the membrane section in contact with the roofing cement and disposing of it.

3.02 SUBSTRATE CONDITIONS

- A. Apply air and vapor barrier, insulation, underlayment to substrates that are clean, smooth, free of flaws, sharp edges, loose and foreign material, oil and grease, ponded water, ice, or snow.
- B. Do not proceed with the installation until defects are corrected.
- C. The substrate must be relatively even without noticeable high spots or depressions. Accumulated water, ice or snow must be removed to prevent the absorption of moisture in the new roofing components and roofing system.
- D. Prior to the placement of membrane underlayment, clear the substrate of debris and foreign material that may be harmful to the roofing system. Gaps greater than 1/4 inch must be filled with an appropriate material.
- E. Any loose flashings at the perimeter, roof drains and roof penetrations must be removed.
- F. Gaps between horizontal and vertical surfaces of the roof area, as well as gaps around penetrations must be sealed to prevent interior warm air from infiltrating and condensing within the roofing assembly. Condensing moisture could weaken bottom insulation facer and eventually result in dislodgement or loose boards when adhesive is used.

3.03 WARRANTY ATTACHMENT ASSEMBLIES

- A. 30-Year Warranty Design Criteria (based on Carlisle System)

| Peak Gust Wind Speed Warranty | Minimum Membrane Underlayment | Insulation Attachment | | | Metal Edging |
|-------------------------------|--|--|--|--|--|
| | | # of Fasteners per 4' x 8' board size ^(a) | Adhesive Ribbon Spacing for 4' x 4' size board Field | Adhesive Ribbon Spacing for 4' x 4' size board Perimeter | |
| 55 MPH | 1-1/2" to 2-1/2" (25 psi) Polyisocyanurate | 16 | 6" (c)(e) | 6" (e) | Carlisle Drip Edge, SecurEdge 200 or SecurEdge 1000 |
| | 1/2" HP Recovery Board ^(a) | | 6" (c)(e) | 6" (e) | |
| | 1/4" Dens-Deck Prime ^(b) | | 6" (c)(e) | 6" (e) | |
| | 1/4" Securock ^(b) | | 6" (c)(e) | 6" (e) | |
| 72 or 80 MPH | 1-1/2" to 2-1/2" (25-psi) SecurShield Polyisocyanurate | 16 | 6" (d)(e)(f) | 6" (f)(g) | Carlisle Drip Edge ^(g) , SecurEdge 200 ^{(g)(h)} or SecurEdge 1000, 2000, or 3000 |
| | 1/2" Dens-Deck Prime ^(b) | | 6" (d)(e)(f) | 6" (f)(g) | |
| | 1/2" Securock ^(b) | | 6" (d)(e)(f) | 6" (f)(g) | |
| 90 or 100 MPH | 5/8" Dens-Deck Prime ^(b) | 16 | FS | FS | SecurEdge 2000 or 3000 |
| | 5/8" Securock ^(b) | | FS | FS | |

Notes:

FS = Full Spray or Ribbons @ 4 inches O.C.

- (a) For Building heights between 51 feet to 100 feet, enhance 12-foot-wide perimeter with 50% more fasteners and plates.
- (b) Hail coverage offered with substrate.
- (c) Structural Concrete - Field @ 12 inches O.C. / Perimeter @ 6 inches O.C.
- (d) 80 mph over Structural Concrete - Field & Perimeter @ 6 inches O.C.
- (e) Cementitious Wood Fiber & Wood – FS.
- (f) 80-mph warranty wind speed coverage over Gypsum Decks – Adhesive Ribbon spacing shall be at 4 inches O.C.
- (g) Carlisle HP or HP-X Fasteners must be used to secure Carlisle Drip Edge or SecurEdge200 Metal Fascia to perimeter wood nailers.
- (h) Membrane securement is required at the base of the SecurEdge 200 waterdam.

ADDITIONAL DESIGN CONSIDERATIONS (25-YR OR 30-YR WARRANTY)

- 1 - MINIMUM MEMBRANE THICKNESS 80-MIL PVC.
- 2 - BUILDING HEIGHT SHALL NOT EXCEED 100'.
- 3 - LOCAL WIND ZONE PER ASCE 7 SHALL NOT EXCEED 130 MPH.
- 4 - ACCEPTABLE DECKING: 22-GAUGE OR HEAVIER STEEL, STRUCTURAL CONCRETE, 1-1/2" WOOD PLANK, OR 3/4" PLYWOOD.
- 5 - ALL "T-JOINTS" MUST BE OVERLAID WITH MANUFACTURER — "T-JOINT" COVERS.
- 6 – NEW CONSTRUCTION OR COMPLETE TEAR-OFF OF EXISTING ROOFING MATERIAL.

3.04 INSTALLATION OF NAILERS

- A. As required by Roofing System manufacturer, install nailers at parapets, curbs, roof accessories, and at all base flashing assemblies.

- B. Wood Nailers: Install treated lumber at the same heights as insulation layer or adjacent construction ± 0.25 -inch. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation. Nailers shall be at least 3-1/2 inches wide and 1-1/2 inches high and installed and anchored in such a manner to resist a force of 250 pounds per linear foot of wood blocking in any direction.

3.05 VAPOR BARRIER INSTALLATION

- A. Store product in a heated area so that it will be between 50 °F (10 °C) and 100 °F (38 °C) at the time of application. All substrates must be primed as per manufacturer's recommendations using approved primer. Install with minimum 3-inch (76.2 mm) side laps and 6-inch (152.4 mm) end laps. Barrier membrane should be rolled in with a 75 lb (34 kg) roller to fully mate each roll to substrate, including all lap areas.

3.06 INSULATION AND COVER BOARD INSTALLATION (ADHESIVE FASTENED)

- A. Lay insulation over substrate butting side joints and end joints as closely as possible. Use tapered insulation as required to assure positive roof drainage. Seal joints with waterproof cloth-backed pressure sensitive tape.
- B. Roof insulation shall be installed whereby the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered. Install no more than can be covered by roofing during the same working day. Taper roof insulation to eaves. If an insulation layer is 1-1/2 inches or less, taper 12 inches from the edge. If insulation thickness exceeds 1-1/2 inches, taper 18 inches from the edge. All taper boards or pieces must be adhered. When a cover board and/or multiple layers are installed, each layer should be offset from the previous layer a minimum of 12-inch on center. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.
- C. Allow the adhesive to rise up approximately 1/8 inch and develop strings (roughly 1.5 to 2 minutes after application at room temperature) prior to setting insulation boards into adhesive.
- D. Walk the boards into the adhesive and roll using the 30 inch wide, 100- to 150-pound weighted steel roller to ensure full embedment. Optimal set up time should be approximately 5 to 10 minutes. CAUTION: Walking on the boards immediately after placement in adhesive can cause slippage/movement until the adhesive has started to set up.

3.07 MEMBRANE INSTALLATION

- A. General: Secure roof membrane to meet the minimum requirements of Factory Mutual Approval Guide, Section 1-2905, for wind lift criteria.
- B. Sweep all loose debris from the substrate. Place adjoining membrane sheets in the same manner, overlapping edges appropriately to provide for the minimum overlap width. It is recommended all overlaps be shingled to avoid bucking of water. Lap seams in the direction of water flow.
- C. In addition to the primary membrane securement, additional membrane securement may be required at the perimeter of each roof level, roof section, curb, skylight, interior wall, penthouse, etc., at any inside angle change where slope or combined slopes exceed 2 inches in 1 horizontal foot, and at other penetrations. Verify and install, as applicable, with manufacturer's warranty requirements. Provide additional fastening at the perimeters and corners per Data Sheet 1-29,

Roof Deck Securement for Above-Deck Roof Components and the roof systems approval listing.

- D. Provide cut-offs at end of each day's work, to cover exposed partially installed membrane and insulation. Remove cut-offs before resuming work.
- E. Adhere membrane to an acceptable substrate with manufacturer's bonding adhesive. Comply with Labels, Material Safety Data Sheet (MSDS) and Product Data Sheets for installation procedures and use. Adhesive must be applied to both the membrane and the surface to which it is being bonded.
- F. Fold membrane sheet back so half the underside is exposed. Sheet fold should be smooth without wrinkles or buckles.
- G. Stir bonding adhesive thoroughly scraping the sides and the bottom of the can (minimum 5 minutes stirring is recommended). Bonding surfaces must be dry and clean. Apply bonding adhesive to the exposed underside of the membrane and the corresponding substrate area. Do not apply bonding adhesive along the splice edge of the membrane to be heat welded over adjoining sheet.
- H. When using Sure-Flex Low VOC Bonding Adhesive, a coverage rate of approximately 120 square feet per gallon per one surface (membrane or substrate) or approximately 60 square feet per gallon per finished surface (includes coverage on both membrane and substrate) shall be achieved. Apply adhesive evenly, without globs or puddles with a plastic core, medium nap paint roller to achieve continuous coating of both surfaces.
- I. A mechanical roller dispenser can be used to apply Bonding Adhesive when the continuous coating and coverage rate noted above are maintained. Backrolling is required. CAUTION: Due to solvent flash-off, condensation may form on freshly applied Bonding Adhesive when the ambient temperature is near the dew point. If condensation develops, possible surface contamination may occur and the application of Bonding Adhesive must be discontinued; verify with manufacturer the steps required to continue roof installation.
- J. Allow adhesive to dry until tacky but will not string or stick to a dry finger touch.
- K. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
- L. Fold back the unbonded half of the sheet and repeat the bonding procedures. Apply bonding adhesive to the remaining exposed underside of membrane and adjacent substrate and complete this section as described above.
- M. Install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches to provide for a minimum 1-1/2 inch heat weld. It is recommended that all splices be shingled to avoid bucking of water.
- N. Heat weld the membrane sheets using the Automatic Heat Welder or Hot Air Hand Welder and silicone roller. Check the surfaces of the membrane to be heat welded to ensure they are properly prepared. The surfaces to be heat welded must be clean with manufacturer's recommended cleaner.
- O. At all splice intersections, roll the seam with a silicone roller to ensure a continuous heat welded seam (the membrane should be creased into any membrane step-off with the edge of the silicone roller). A false weld may result due to surface irregularities created by multiple thicknesses of membrane sheets.
- P. Perform a test weld at the start of work each morning and afternoon. Test welds should be made if any changes in substrate or weather conditions occur.

- Q. Operator to use manufacturer's approved method to prevent membrane creeping during welding.
- R. Probe all heat-welded seams once they have thoroughly cooled. After seam probing is completed, apply manufacturer's cut-edge sealant on all cut edges of reinforced membrane where the scrim is exposed.
- S. When using 80-mil Sure-Weld/Sure-Flex Membrane, a PVC "T"-Joint Cover must be applied.
- T. In finished areas, storing, walking, wheeling, or trucking will not be permitted. Provide smooth, clean boards or plank walkways, runways, and platforms near supports, as needed to distribute weight to conform to indicate live load limits and transient loads imposed during roofing installation and construction.
- U. Membrane overlaps shall be shingled with the flow of water whenever possible.
- V. Hot-Air Weld Overlap Seams
 - 1. Thoroughly clean the contact surfaces of the membrane by washing with a detergent and allow surface to dry.
 - 2. Welding Start-Up (start of every welding cycle: morning, after break, after lunch, etc.): Before starting any finish welding, operators are to conduct several test welds using the same membrane at the same ambient temperature as the just installed courses and cut 1-inch wide strips of the test membrane and pull apart (tear bond) to determine quality of the welds. A satisfactory weld is when the weathering layer (membrane surface) is fully welded to the underside of the overlapping membrane, and when pulled, is torn away, exposing the reinforcement scrim of the underlying membrane. Minimum acceptable Automatic welds are 1-1/2-inch wide and 2-inch wide for hand welds. Automatic Welder temperature and speed is to be monitored and adjusted throughout the day to prevent over-heating (creating blisters, burns and/or distortions of the lap area), under-heating (laps are not thermally sealed). Hand Welders are to be monitored and adjusted throughout the day to prevent over-heating (creating blisters, burns and/or distortions of the lap area), under-heating (laps are not thermally sealed).
 - 3. All courses shall be installed with 5-inch side-laps, and 4-inch end-laps.
 - 4. Membrane must be installed tightly around the base of pipe penetrations or trimmed and gapped as required by the fire code around heat sources (like heat flumes, chimneys, etc.).
 - 5. Weld the two sheets together by using a fully automatic, self-propelled welding machine, which directs a stream of hot air into the seam area. Use hand-held welder and roller at areas not accessible by machine.
 - 6. Weld end lap seams in the same manner as side seams. Apply a continuous bead of seam sealant to the exposed edge of membrane side laps and end laps.

3.08 FLASHING

- A. Detail all flashings and roof turn-up at curbs, cants, and parapets in strict accordance with the membrane manufacturer's standard illustrated details.
- B. Fasten all flashing at the top, under, or through appropriate counterflashing as per manufacturer's standard details and warranty requirements.
- C. Apply bonding adhesive to both the underside of flashing and to the surface to which it is to be bonded.
- D. Membrane shall be adhered to vertical surfaces with bonding adhesive. Bonding adhesive shall be applied continuously, without globs or puddles. After the bonding

adhesive has properly dried, roll the membrane into the adhesive. Apply a continuous strip of roofing membrane up to the parapet wall cap. Provide sealant as per manufacturer's warranty requirements.

- E. Factory-fabricated metal edge systems must be secured to the wood nailer as specified by the manufacturer. Shop-fabricated edging must be installed in compliance with appropriate Carlisle Detail using Carlisle TPO/PVC Coated Metal in order to achieve ES-1 Compliance.
- F. Roof Drains: Sure-Flex membrane may extend into the drain sump when the slope of the sump is less than 3 inches to 1 horizontal foot. When the drain sump is greater than 3 inches to 1 horizontal foot, additional membrane securement must be installed. Only drain strainers that have been approved by the specifier in accordance with applicable codes may be used.
- G. Flash pipes with Molded Pipe Flashings or Split Pipe Seals where their installation is possible. Molded pipe flashings cannot be cut and patched; deck flanges cannot be overlapped or installed over angle changes. Where Molded Pipe Flashings or Split Pipe Seals cannot be installed, APPLY FIELD FABRICATED PIPE FLASHING using Sure-Flex non-reinforced membrane. Flexible Penetrations (braided cables, conduits, wires, etc.) must be enclosed in a stable "goose neck." Apply a Split Pipe Seal or field fabricated pipe flashing to flash the goose neck. Hot pipes that exceed 140 degrees F, must utilize an insulated metal collar and rain hood, flashed with a field fabricated pipe flashing. For pipe clusters or unusually shaped penetrations, a Molded Sealant Pocket and White One Part Sealant must be utilized.
- H. In areas where metal counterflashing or surface mounted reglets are used as vertical terminations, the counterflashing must be sealed with a rubber grade caulking to prevent moisture migration behind the new wall flashing.
- I. To comply with various warranty options, flashing material must equal the required minimum membrane thickness but shall not be less than 60 mils thick. For projects with 20-year or greater warranties, Carlisle Pre-Fabricated accessories must be used unless prohibited by a specific field condition.

3.09 REPAIRS

- A. Make necessary repairs in the following manner:
 - 1. A Hand Held Hot Air Welder and a 2 inch wide silicone roller must be used when repairing the membrane.
 - 2. Prior to proceeding with any repair procedure, the area to be repaired must be cleaned with manufacturer's approved membrane cleaner.
 - 3. Weld the new membrane to the cleaned area using standard welding procedures. Probe all edges of the overlay once cooled to ensure a proper weld has been achieved. Seal all cut edges of reinforced membrane.

3.10 CLEANING

- A. Restore to original condition or replace adjoining work or materials that have been damaged as a result of performing this work.
- B. After completion of the work in this Section, remove excess roofing materials and debris from the site. Remove protective coverings and leave the roof, gutters, and adjacent premises broom clean.

END OF SECTION

SECTION 07600
FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Pre-coated galvanized steel sheet metal flashing, counterflashing, copings, expansion joints, and all other sheet metal work not covered in other sections.

1.02 REFERENCES

- A. "Architectural Sheet Metal Standards" by Sheet Metal and Air Conditioning Contractors National Association (SMACNA), latest edition.
- B. ASTM International (American Society for Testing and Materials - ASTM):
 - 1. A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 2. A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
- C. California Building Standards Commission
 - 1. 2019 California Building Code (California Code of Regulations, Title 24)

1.03 SUBMITTALS

- A. Product Data: Fully describe all manufactured items to be furnished.
- B. Shop Drawings: Show all custom-fabricated items clearly illustrating the design, dimensions, materials, methods of construction and installation of each piece of work.
- C. Manufacturers' Instructions: For manufactured items.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: A company having at least ten (10) years' experience in the specialized manufacture of flashing and sheet metal as specified herein.
 - 2. Installer Qualifications: An experienced installer having at least five (5) years' experience installing flashing and sheet metal systems and assemblies similar in material, design, and extent to those indicated.
- B. Comply with the adopted edition of the 2019 California Building Code (CBC), especially Chapters 14, 15 and 25.
- C. Where specific details are not provided comply with applicable details in the SMACNA Architectural Sheet Metal Standards.

- D. Except where otherwise indicated, comply with minimum thickness or gage requirements as specified in SMACNA Architectural Sheet Metal Manual.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. For any unpainted items, deliver all items to the job site, allowing time for field priming and incorporation into work of other trades.
- B. Store materials under dry conditions and protect from moisture and physical damage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sheet Steel: Copper bearing, 26-gauge or heavier where noted; hot dip galvanized complying with ASTM A653 and A924, G90 Commercial Class 1.25 ounce per square foot, mill phosphatized for maximum paint adherence.
 - a. Pre-finished metals to have factory finish (Kynar 500 or equal), 24 gauge minimum, color to match existing parapet cap flashing/fascia – field verify.
- B. Fasteners:
 - 1. To Concrete Masonry Units: Deformed steel wedge pins driven into lead expansion shields; RAWL, Tapcon, or equal.
 - 2. To Wood Nailers and Sills: Pan head, noncorrosive, sheet metal screws.
 - 3. Component Fasteners: Self-drilling/self-tapping, stainless steel screws, type S-12, Buildex TEKS; Fastenal; or equal.
 - 4. Screw heads shall be furnished with neoprene washers.
- C. Sealant: Polyurethane sealant type as specified in Section 07900. Where specified sealant is incompatible with other adjacent sealants, Contractor shall submit a sealant suitable for intended use and of equivalent life expectancy.
- D. Isolating Material: Alkali-resistant bituminous paint or varnish.
- E. Flashing for Vent Pipes, Conduits, Etc. Through Roof: Provide round base, UV-resistant pipe flashing in diameter sized to penetration. Include aluminum insert to conform to panel configuration and/or roof pitch. Flashing to be black in color.

2.02 FABRICATION

- A. Before fabrication, take field measurements, ascertain existing field conditions and have discrepancies corrected before proceeding with sheet metal work.
- B. Fabricate sheet metal items in the shop to the greatest extent possible. Fabricate using techniques and methods described in the SMACNA Architectural Sheet Metal Standards.
- C. Make sections uniform with true, straight breaks, accurately fitted and rigidly secured. Provide overlapping tabs for soldered joints. Fabricate items in maximum lengths.
- D. Provide accessories necessary to complete installation. Provide ribs, cleats, stiffeners, sleeves, hangers and other reinforcements required to make sections rigid and substantial, in same metal as basic unit.

- E. Miter corner joints and reinforce with extended tabs or backing plates.
- F. Lap expansion joints at least 4 inches and seal with polyurethane sealant, type "B".

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine surfaces to receive sheet metal work for defects that will adversely affect the execution and quality of the work.
- B. Do not start work until all unsatisfactory conditions are corrected.
- C. Ensure that all wood nailers have been properly installed.
- D. Ensure that all galvanized sheet metal items are prime coat painted on all concealed and exposed surfaces, under Section 09900, before installation.

3.02 WORKMANSHIP

- A. All work shall be watertight and shall drain properly.
- B. Make proper allowance for expansion and contraction of the metals and of the materials to which they are fastened.
- C. Form work accurately to sizes, shapes, and dimensions indicated or necessary, with angles and lines in true alignment, straight and sharp; miters and joints accurately fitted.
- D. Erect work plumb, level and in proper plane, without bulges, or waves. Fit metal closely and neatly to cores or framework. Cope or flange intersections to fit accurately. Reinforce heavily loaded joints with screws or rivets. Corners shall be reinforced, and seams made waterproof. Exposed work shall be free of dents and other defects. Edges of sheet metal shall be hemmed.
- E. Set items in sealant or plastic cement as shown or noted; or when such application is necessary to provide a watertight job.
- F. Provide isolation between dissimilar metals or other materials with sealant, butyl tape, bituminous paint or asphalt saturated felt. Provide waterproof neoprene washers wherever fasteners penetrate sheet metal. Exposed fasteners will not be permitted for any portion of this work.
- G. Perform sealant work in conformance with the requirements of Section 07900.

3.03 FLASHING

- A. Install all Flashings as required to provide watertight protection.
- B. Lap all seams in direction of water flow.
- C. Carry Flashings around corners at least 4 inches.

- D. Lap joints 4 inches minimum. Apply sealant to the overlapping surfaces of the joints. Beads of sealant which will be concealed in the finished work shall be continuous with no voids of material.

3.04 INSTALLATION

- A. Provide sill and head Flashing at all louvers, doors and windows as shown and as required for a watertight installation. Furnish in the same metal as the louver.
- B. Provide Flashing where shown and where required for a watertight installation.

3.06 CLEANUP

- A. Clean all finished surfaces, removing all excess sealant, etc. Wash down all work with soap and hot water, flush with clean water, and wipe dry.
- B. Repair or replace all damaged or defective areas to ensure watertightness and neat appearance.

END OF SECTION

SECTION 07900

JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Sealant work required:
 - a. For a watertight project.
 - b. Required by code and not specifically covered in another section.
 - 2. Seal between all louvers and adjacent surfaces.
 - 3. Minimum standards for all sealant work whether covered in this Section or in other sections.

1.02 REFERENCES

- A. American Society for Testing Materials (ASTM)
 - 1. C920 Standard Specification for Elastomeric Joint Sealants
- B. California Building Standards Commission
 - 1. 2019 California Building Code (California Code of Regulations, Title 24)

1.03 SUBMITTALS

- A. Product Data: Fully describe all products proposed for use.
- B. Samples: Physical samples of cured sealants for selection of colors.
- C. Manufacturer's Instructions: Application instructions for all products used.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: A company having at least ten (10) years' experience in the specialized manufacture of joint sealants as specified herein.
 - 2. Installer Qualifications: An experienced installer having at least five (5) years' experience installing joint sealants similar in material, design, and extent to those indicated.
 - a. Qualifications: Provide sealant work performed by a licensed Specialty Sealant and Waterproofing Contractor who is exclusively engaged in sealant application work. All work to be performed by qualified journeymen proficient in the craft of sealant application.
- B. Regulatory Requirements: Comply with the California Building Code (CBC), 2019 edition.

1.05 PROJECT CONDITIONS

- A. Environmental Requirements: Apply sealant only when temperature and humidity conditions are at the levels recommended by the sealant manufacturer.

1.06 SPECIAL GUARANTEE

- A. Provide a written Special Guarantee covering replacement of sealant work that fails within 2 years of the date of project acceptance. Failure includes:
 - 1. Becomes brittle or cracking due to exposure, contraction, or expansion.
 - 2. Failure to resist abrasion of normal use and traffic.
 - 3. Tear failure due to movement within 50% of joint width for Class A sealants.
 - 4. Cohesive or adhesive failure due to movement within 50% of joint width for Fed. Spec. Class A sealants.
 - 5. Water infiltration for joints intended to exclude water, air infiltration for joints intended to exclude air.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sealant Type "A": Exterior and/or interior vertical surface sealant (location as approved by manufacturer) for use in joints in concrete, metal and similar materials, conforming to ASTM C920 Type II, Class A, in color selected. Acceptable products are:
 - 1. One part polyurethane: Tremco "Vulkem" No. 116 (approved for exterior use only).
 - 2. One part polyurethane: Sika Sealant Division Sikaflex Ia.
 - 3. Or equal.
- B. Sealant Type "B": Paintable silicone sealant suitable for sealing cracks, voids, joints, etc. in exterior or interior surfaces that are to be painted or left unpainted. Acceptable products are:
 - 1. G.E. Paintable Silicone Sealant.
 - 2. Dow Corning Paintable Silicone Sealant.
 - 3. Or equal.
- C. Sealant Backup: Closed Cell Polyethylene rod stock. Acceptable products are:
 - 1. Dow Corning "Ethafoam."
 - 2. Nomaco, HBR Backer Rod.
 - 3. Or equal.

PART 3 - EXECUTION

3.01 CONDITION OF SUBSTRATE

- A. Inspect substrates to receive sealant work for:
 - 1. Deviation beyond allowable tolerance for joint width and required clear joint depth. Joint width shall not be less than ¼ inch or the width shown.
 - 2. Presence of contaminants, which cannot be removed by normal joint cleaning.
 - 3. Presence of moisture. Joint surfaces shall be dry.
- B. Do not start work until all unsatisfactory conditions have been corrected.

3.02 PREPARATION OF SURFACES

- A. Clean surfaces that the sealant is to adhere:
 - 1. For Concrete and Masonry: Sandblast joint surfaces taking care to protect exposed finish surfaces.
 - 2. For Metal: Sand or scrape and solvent clean with a non-film forming solvent.
- B. Ensure that cleaned surfaces are not contaminated before applying sealant.

- C. Where deemed necessary, use manufacturer's recommended primers for porous and non-porous substrates and/or surfaces.

3.03 APPLICATION

- A. Follow sealant manufacturer's published instructions.
- B. Install sealant backup the proper distance from face of joint for joint proportioned in accordance with sealant manufacturer's recommendations. Use polyethylene rod stock larger than joint so that backup can be firmly held in place.
- C. Apply primer and/or cleaner conditioner recommended by sealant manufacturer for substrate. Avoid getting primer on the face of material or on areas that will not be covered by sealant.
- D. Mask edges of joint with masking tape where required to avoid contamination of exposed surfaces adjacent to joint.
- E. Apply self-leveling sealant by pouring, pumping, or with a caulking gun. When using a pump or caulking gun, fill joint from the bottom up to avoid air entrapment. Fill joint flush with surface of adjacent material without overfilling or spilling sealant on exposed surfaces.
- F. Apply vertical grade sealants by hand or power operated caulking gun. Use a caulking tip the proper width for the joint required. Fill the joint from the bottom up to insure a fully filled joint without entrapped air bubbles or voids. Use lubricant recommended by sealant manufacturer to tool joints. Force sealant against sides and bottom of joint and into all crevices; press out air bubbles and voids. Tool the sealant surface smooth and flush with adjacent surfaces for butt joints or to an even, straight-sided fillet of uniform width and slope for fillet joints.
- G. Where the substrate or adjacent sealants are incompatible with the specified sealant, submit a sealant suitable for the required use and of equivalent life expectancy to the specified sealant.

3.04 CLEANUP

- A. Upon completion, remove protective masking and clean any sealant from adjacent finished surfaces beyond edge of joint.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. A painter's finish on exterior surfaces where noted, except:
 - a. Factory finished items such as anodized aluminum, light fixtures, etc.
 - 2. Painter's top coat or refinishing coat in a color to match adjacent surfaces on:
 - a. Existing roof scuttle and hatches.
 - 3. Prime coat paint on all exposed and concealed surfaces of sheet metal flashings prior to installation. See also Section 07600.

1.02 REFERENCES

- A. Where standards of surface preparation are described by citing SSPC specification numbers reference is made to "Systems and Specifications" Volume 2 published by The Coatings Society at SSPC.

1.03 SUBMITTALS

- A. Contractor Qualifications: Submit a list of at least five projects completed in the past five years where coatings, similar to those required for this project, were applied by the Specialty Painting Contractor proposed for this project.
- B. Product Data:
 - 1. Submit complete technical data on all materials to be used on the project for review prior to ordering material. Include manufacturer's brand name and type of material for each coat of each system to be used.
 - 2. The Contractor shall base his bid on using the products specified. If the products specified are not available in formulations that meet applicable Air Quality Management District regulations on maximum VOC levels, the Contractor shall submit products of equivalent quality and function that comply with regulations in effect at that time.
 - 3. If products manufactured by makers other than the first named product by the first named maker listed in Part 2 of this Section are submitted, submit supporting performance test results prepared by an independent paint testing laboratory for comparison with the performance of the first named product by the first named maker.
 - 4. If the Contractor's second submittal of a proposed equivalent material is not favorably reviewed the Contractor will be back-charged by the Owner for the cost of subsequent reviews.
- C. Manufacturer's Certification: That products furnished meet applicable Air Quality Management District regulations as to allowable VOC content for the place of application and use intended.
- D. Samples: For paints submit two 8-1/2 by 11-inch brush-outs of each paint system and each color on cardboard.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: A company having at least ten (10) years' experience in the specialized manufacture paints as specified herein.

2. Installer Qualifications: An experienced installer having at least five (5) years' experience installing paint systems similar in material, design, and extent to those indicated.

- a. Contractor Qualifications: In submitting his bid, the Contractor represents that he is skilled and experienced applying the coatings, has studied the material manufacturer's application requirements for the materials specified, agrees that the materials are suitable for intended use, and has included in his bid the cost of all labor and material required to achieve a successful coating system that meets the performance requirements of the contract documents.

B. Regulatory Requirements: All work, material, procedures and practices under this Section shall conform with requirements of the Federal Standard 40 CFR on air quality control, and the requirements of the local Air Resources Board or Air Quality Management District having jurisdiction. Coatings or primers applied at locations other than the project site shall be done in accordance with local air quality regulations in effect at the place the coating is applied.

1.05 WARNING

A. The Contractor is advised that the application, mixing and/or cleaning of paint and finishing material may be hazardous. The Contractor shall take all necessary precautions to ensure the safety of workers and property. This includes, but is not limited to, the use of NIOSH-approved respirators, and all applicable personal protective equipment (PPE), for example, cloth coveralls, eye protection, gloves and head coverings.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in unopened containers with manufacturer's label. Label shall state VOC content.
- B. Store in assigned area. Maintain storage area clean and fire safe. Dispose of used rags and clean buckets daily. Store solvents in closed approved storage containers.
- C. Submerge solvent soaked rags in water.

1.07 PROJECT CONDITIONS

- A. Environmental Requirements:
1. Provide ambient temperatures recommended by manufacturer of material to be applied.
 2. Provide adequate ventilation.
 3. Use temporary dust barriers to close off areas being painted from areas where other work is being performed.

1.08 COLORS AND COLOR SAMPLES

A. Before starting work, obtain color schedule and samples of colors selected for this project by the Architect. The colors selected may not be standard colors for the manufacturer whose materials are being used in which case custom colors shall be

mixed to match the samples provided by the Architect. "Deep tone" highly pigmented accent colors may be selected for up to 10% of the area painted.

- B. Colors are to be factory or machine mixed, using light-fast colorants proportioned by accurate measurement into a proper tinting base. The color formula for each color shall be submitted to facilitate future color matching.
- C. Exterior deep tone colors are to be factory ground into the pigment for maximum color fastness.

PART 2 - PRODUCTS

2.01 MATERIALS - GENERAL

- A. Coatings used shall be "top of the line" and of the type recommended by the manufacturer for the intended use and substrate.
- B. Applicable Air Quality Management District regulations prohibit the manufacture, sale or application of Architectural Coatings and Specialty Coatings having greater than stipulated levels of volatile organic compounds.
- C. If the Contractor applies any coatings for which it has not submitted certificates indicating the VOC content and that the product complies with applicable Air Quality Management District regulations, or if it applies coatings that have been modified or thinned other than as recommended by the manufacturer, the Contractor shall be responsible for any fines, costs, remedies, or legal actions that may result.
- D. The Contractor shall not submit or use any material containing Trichlorethylene III because of its potential cancer-causing properties. If any of the materials specified in this Section contain trichlorethylene, they shall be considered deleted from this Specification.

2.02 SPECIALTY COATINGS: PRIMERS, STAINS, SEALERS AND CLEARS

- A. Products and makers listed establish type of material and level of quality. Equivalent products manufactured by Glidden Professional Paints, Sherwin-Williams, or equal may be submitted for review.
- B. Specialty Coatings: Coatings listed under this category include primers, sealers, stains and clear coatings. All products provided shall comply with the maximum allowable VOC limit assigned to that category of product by the Air Quality Management District having jurisdiction.

1. LATEX UNIVERSAL RUST INHIBITING PRIMER

Primer for galvanized metal, shop primed steel, etc. Maximum allowable VOC limit 350. Glidden Professional Acrylic Enamel Devflex 4020PF, Sherwin-Williams Pro Industrial Pro-Cryl Universal Acrylic Primer B66W01310, or equal.

2. CHROMATE METAL PRIMER

Maximum allowable VOC limit 350. N/A. Otherwise, Glidden Devguard 4160, Sherwin Williams DTM Acrylic Primer/Finish, or equal.

3. INTERIOR LATEX PRIMER SEALER

Latex primer sealer for interior walls, concrete block and concrete. Maximum allowable VOC limit 350. Glidden PVA Drywall Primer and Sealer, Sherwin-Williams PVA Drywall Primer & Sealer, or equal.

4. ALKYD PHENOLIC GALVANIZED METAL PRIMER

Solvent thinned, alkyd phenolic galvanized metal primer. Maximum allowable VOC limit 450. XIM 360 Gray NT Primer, Tnemec-Zinc Series 90-97, Glidden Devguard 4160, Sherwin-Williams Sherwin Williams DTM Acrylic Primer/Finish, or equal.

5. CONCRETE AND MASONRY PRIMER / SEALER

Sherwin-Williams PREPRITE® ProBlock Interior / Exterior Latex Primer / Sealer, or equal.

2.03 ARCHITECTURAL COATINGS

A. Coatings listed under this category consist of decorative and protective coatings used to protect surfaces and provide color for buildings and other structures. Most paints and enamels fall under this category. All products used under this category must comply with a VOC limit of 350 unless otherwise noted.

B. Products and makers listed establish type of material and level of quality. Equivalent products manufactured by Glidden, Sherwin-Williams, Devoe Coatings, or equal may be submitted for review.

1. EXTERIOR LATEX ENAMEL

100% acrylic latex (gloss to match existing painted surfaces – field verify) exterior house and trim enamel with excellent color and gloss retention and weather resistance. Glidden Premium Exterior Semi-Gloss Paint, Sherwin-Williams SuperPaint Exterior Latex Gloss A84 Series, or equal.

2. ACRYLIC LATEX MASONRY PAINT

100% acrylic latex (gloss to match existing painted surfaces – field verify) exterior masonry paint with excellent color and gloss retention and weather resistance. Glidden Stucco and Masonry Exterior Paint, Sherwin-Williams Exterior Masonry Topcoat, or equal.

PART 3 - EXECUTION

3.01 CONDITION OF SURFACES TO BE PAINTED

A. Examine areas to receive work of this Section. Make certain that surfaces are even, smooth, sound, clean, dry, and free from defects or substances that might affect application.

B. Arrange for repairs or major cleaning as required. Starting work indicates acceptance of surfaces as satisfactory to achieve required result.

3.02 PREPARATION OF SURFACES

A. Check that hardware, trim, plates, lighting fixtures and similar items have been removed before starting work; coordinate with work under sections installing such items. Check that equipment adjacent to walls shall be disconnected and moved to permit wall surfaces to be painted before starting work under this Section.

B. Wash metal surfaces with solvent or cleaner to remove dirt or grease and clean off rust or scale with wire brush or sandpaper.

C. Bare or Shop Coated Steel: Remove rust and scale by wire brushing or sandblasting; wash with solvent or cleaner.

- D. Galvanized Steel: Etch with phosphoric solution such as Watco "Galvaprime", Endura "Galva-prep", or equal; flush surface clean with water and allow to dry.
- E. Prepare all surfaces in accordance with the more stringent of the coating material manufacturer's recommendations, other requirements in this paragraph 3.02 or referenced or applicable requirements for surface preparation in "Systems and Specifications", Volume 2, published by The Coatings Society, at SSPC.org and summarized below:
 - 1. SSPC-SP1 - Solvent Cleaning: Removal of all oil, grease, soil, drawing compound, cutting compound and other soluble contaminants from the surfaces with solvents and/or commercial cleaners by wiping, dipping, steam cleaning or vapor degreasing.
 - 2. SSPC-SP2 - Hand Tool Cleaning: Removal of all loose mill scale, rust, paint and other loose detrimental foreign matter by the use of non-powered hand tools.
 - 3. SSPC-SP3 - Power Tool Cleaning: Removal of all loose mill scale, rust, paint and other loose detrimental foreign matter by the use of power-operated portable tools.
 - 4. SSPC-SP5 – White Metal Blast Cleaning: Cleaning of a steel surface, previously painted or unpainted, to white metal condition through the use of abrasive blast media. The surface should, without magnification, be free of all visible oil, grease, dust dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter.5. SSPC-SP6 - Commercial Blast Cleaning: Removal of all oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other required methods. Remaining discoloration stains shall not exceed 33-1/3% of each square inch of surface.
 - 6. SSPC-SP7 - Brush-Off Blast Cleaning: Removal of all oil, grease, dirt, dust, loose-mill scale and loose paint by compressed air nozzle blasting. Centrifugal wheels or other required means.
 - 7. SSPC-SP11 – Power Tool Cleaning to Bare Metal: Removal of all stains from mill scale, rust or paint using power tools to take a surface to bare metal, while ensuring a minimum surface profile of 1 mil. Used in situations where abrasive blasting is not possible or feasible.
 - 8. SSPC-SP13 – Surface Preparation of Concrete: Preparation of concrete surfaces prior to the application of bonded coating or lining systems by the removal of all surface contaminants including laitance, loose concrete and dust. Standard covers requirements for thermal, mechanical and chemical application methods.
- F. Dust all surfaces and wipe clean with a tack rag just prior to coating.

3.03 APPLICATION

- A. Apply all material in strict accordance with manufacturer's instructions. Apply first coat immediately after surface preparation.
- B. Do not apply coatings when temperature is below 55°F. Do not apply exterior coatings in damp or rainy weather.
- C. Brush out each coat to a uniform, even coating; lay material on in one direction and brush out at right angles. Special application techniques may be required for new coatings with low VOC content. Apply such coatings in strict accordance with

manufacturer's detailed instructions. Allow material to dry 48 hours between coats unless longer period specified by manufacturer.

- D. Paint items and surfaces before installation that will be difficult or impossible to paint after installation.
- E. Apply not less than the number of coats specified. Apply additional coats if required for uniform coverage and full hiding. Apply finishes in their factory original consistencies. Do not thin unless specifically recommended by the manufacturer.
- F. Finish work shall be uniform in color, full coverage, smooth and free of sags and brush marks
- G. Do all cutting in to a sharp, true line. Repaint if necessary to correct over runs.
- H. Do not paint over Underwriters' labels, fusible links, sprinkler heads, or fire alarm devices.
- I. Paint access panels, electrical panels, air registers and similar items prior to installation to prevent edges from peeling or chipping when panels are removed.
- J. Repaint factory finished electrical panels, air registers, and other items to match adjacent painted surfaces.

3.05 PROTECTION, CLEANING AND COMPLETION

- A. Protect finish work by suitable covering or other method as job progresses.
- B. Remove paint spots from floors, glass and other surfaces, upon completion of work. Remove rubbish, empty containers and other accumulated materials from premises. Leave work in clean, orderly, acceptable condition.
- C. Check work of this Section at completion of project. Touch-up or refinish marred or damaged surfaces. Replace glass damaged by operations under this Section. Leave entire area with finish free from imperfections.

3.07 PAINTING SYSTEMS AND SCHEDULE: ARCHITECTURAL COATING SYSTEMS

- A. See Notes on Drawings for additional location of surfaces to receive paint systems.
- B. Characteristics of paint materials are described in Part 2 of this Section. First-named products are listed in this Schedule. Equivalent products by other manufacturers may be submitted for review in accordance with paragraphs 1.03 and 2.02 of this Section.
- C. System "A": EXTERIOR LATEX ENAMEL.
 - 1. First Coat:
 - a. Shop primed ferrous metal: Touch-up with ALKYD RUST INHIBITING PRIMER. Devoe Coatings Multi-Purpose Tank and Structural Primer Devguard No. 4160. Where shop prime coat is not suitable for overcoating with latex system, re-prime entire surface with ALKYD PHENOLIC PRIMER. Devoe Coatings Multi-Purpose Tank and Structural Primer Devguard No. 4160.
 - b. Unprimed ferrous metal: ALKYD RUST INHIBITING PRIMER. Devoe Coatings Multi-Purpose Tank and Structural Primer Devguard No. 4160.

- c. Galvanized Metal: Pretreat with phosphate solution in accordance with paragraph 3.02D and prime with ALKYD PHENOLIC GALVANIZED METAL PRIMER. XIM 360 Gray NT Primer.
 - d. Aluminum: Pretreat with metal etch and prime over aluminum. XIM 360 Gray NT Primer, Devoe Coatings Multi-Purpose Tank and Structural Primer Devguard No. 4160
 - 2. Second and Third Coats: Two coats of EXTERIOR LATEX ENAMEL ((gloss to match existing painted surfaces – field verify) Sherwin-Williams SuperPaint Exterior Latex Gloss A84 Series.
- D. System "B": ACRYLIC LATEX MASONRY PAINT for Exterior Concrete or Concrete Block:
- 1. Surface Preparation: Very light brush-off blasting to create a fine tooth: SSPC-SP 7.
 - 2. First Coat:
 - a. On Concrete: CONCRETE AND MASONRY PRIMER SEALER, applied at the rate recommended by the manufacturer. Sherwin-Williams PREPRITE® ProBlock Interior / Exterior Latex Primer / Sealer.b. On Concrete Block: LATEX BLOCK FILLER. Sherwin-Williams PREPRITE® Interior/Exterior Latex Block Filler B25W00025.
 - 3. Second and Third Coats: ACRYLIC EXTERIOR MASONRY PAINT, applied at the rate recommended by the manufacturer. Sherwin-Williams SuperPaint Exterior Latex Flat A80 Series.
- E. SCHEDULE

| Location | Item | Paint System |
|----------------|----------------------|--------------|
| Roof | Roof Hatches | A |
| Parapet | Miscellaneous Metals | A |
| Exterior Walls | Masonry Touch-Paint | B |

END OF SECTION

SECTION 10200

LOUVERS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Fixed-Blade Extruded-Aluminum Louvers.
 - 2. Louver Screens
 - 3. Bituminous Paint

1.02 REFERENCES

- A. Air Movement and Control Association International, Inc. (AMCA)
 - 1. AMCA 500-L – Laboratory Methods of Testing Louvers for Rating
 - 2. Standard 501 – Louver Application Manual and Design Guide
 - 3. AMCA 511 - Certified Ratings Program - Product Rating Manual for Air Control Devices.
- B. American Architectural Manufacturers Association (AAMA)
 - 1. AAMA 611 – Voluntary Specification for Anodized Architectural Aluminum
- C. American Society for Testing Materials (ASTM):
 - 1. B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - 2. D1187 Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal
- D. "Architectural Sheet Metal Standards" by Sheet Metal and Air Conditioning Contractors National Association (SMACNA), latest edition.
- E. California Building Standards Commission
 - 1. 2019 California Building Code (California Code of Regulations, Title 24)

1.03 SUBMITTALS

- A. Product Data: Manufacturer's data sheets for each product and assembly specified.
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Cleaning methods.
- B. Shop Drawings: Custom prepared for this project.
 - 1. Include plans; elevations; sections; and details showing profiles, angles, and spacing of elements. Show unit dimensions related to wall openings and adjacent construction; free area for each size indicated for louvers; profiles of frames at jambs, heads, and sills; and anchorage details and locations.
 - 2. Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.
- C. Product Certificates:
 - 1. Air Performance: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are

tested in accordance with AMCA Standard 500 and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.

2. Water Penetration: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are tested in accordance with AMCA Standard 500 and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.
3. Weather Louver Effectiveness: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are tested in accordance with AMCA Standard 500-L99, Section 8.3.2 - Wind Driven Rain Water Penetration Test, and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.

- D. Selection Samples: Two complete color charts showing the full range of colors available for units with factory-applied color finishes.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A company having at least ten (10) years' experience in the specialized manufacture of louvers.
- B. Installer Qualifications: An experienced installer having at least five (5) years' experience installing louvers and assemblies similar in material, design, and extent to those indicated.
- C. Source Limitations: Obtain products through one source from a single manufacturer where alike in one or more respects regarding type, design, or factory-applied color finish.
- D. AMCA Standard 500-L: Air performance, water penetration and air leakage ratings shall be determined in accordance with Air Movement and Control Association International Inc (AMCA) Standard 500, "Laboratory Methods of Testing Louvers for Rating."
- E. SMACNA Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" recommendations for fabrication, construction details, and installation procedures.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations, and industry standards.
- B. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.
- C. Handling: Protect materials and finishes during handling and installation to prevent damage.

1.06 SEQUENCING AND SCHEDULING

- A. Field Measurements: Verify openings and adjacent construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS FOR STATIONARY LOUVERS.

- A. Provide louvers that have all joints concealed.
- B. Continuously weld all joints in the louver assembly using a shielded arc process.
- C. Provide all related break shape and extruded aluminum sills, flashings and sub-frames. Flashings shall be 0.050 or thicker as indicated.
- D. Provide all required aluminum angles, tees, plates and other shapes required for a complete installation.

2.02 FIXED-BLADE EXTRUDED-ALUMINUM LOUVERS

- A. Acceptable Manufacturers: Louver style K6774 exposed vertical mullion type, manufactured by Airolite; Construction Specialties; Ruskin; or equal.
- B. Design Criteria: Design and test louvers to AMCA Standard 500-L and shall bear AMCA certified rating seals for air performance and water penetration. Test a 4x4-foot louver with a minimum free area of 7.89 square feet to pass at least 800 FPM through the free area at a pressure drop not exceeding 0.15 in W.G. Limit water penetration to 10 ounces of water per square foot of free area when tested at 720 FPM for 15 minutes per AMCA Standard 500-L.
- C. AMCA Seal: Mark units with AMCA Certified Ratings Seal.
- D. Provide extruded aluminum framed continuous blade louvers with exposed jambs and mullions, depth to match existing louver (field verify), with blades spaced 3 inches on center. Use aluminum extrusions; ASTM B 221 alloy 6063-T52 for all parts.
- E. Use extruded horizontal drainable blades, 12-gauge (0.81 inches) thick, having a downward turned stiffening leg along the front bottom edge and an up turned leg with a forward-facing lip to stop water migration along the top rear edge. Use blades that have an extruded hood on their bottom surface to interlock with mullion support brackets. Set louver blades at a 30-degree angle for exhaust and 45-degree angle for intake.

2.03 ALUMINUM FINISHES

- A. Anodized Louvers: Comply with AAMA's "Voluntary Specification for Anodized Architectural Aluminum" for requirements of high-performance aluminum oxide coatings and finish designations.
- B. Finish units after assembly.
- C. Class I, Color Anodic Finish: AA-M12C22A42/A44 complying with AAMA 611.
 - 1. Mechanical Finish: Nonspecular as fabricated.
 - 2. Chemical Finish: Etched, medium matte.
 - 3. Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker. Color to fall in standard range for color variation in anodic finishes.
 - 4. Colors to be selected from manufacturer's standard color range.

2.04 LOUVER SCREENS

- A. General: Provide exterior louvers with louver screens.
 - 1. Screen Location: Interior face, unless otherwise indicated.
 - 2. Screening Type: Insect screening, unless otherwise indicated.
 - 3. Where ductwork is attached to the interior side of louver provide holder for screen frame that can be built into ductwork and so arranged that by opening a door in duct, screen can be slid out for cleaning without disassembling ductwork. Where there is no ductwork attached to interior of louver, provide a holder for screen frame designed so that screen can be removed for cleaning and replaced without using tools.
- B. Attachment: Secure screens to louver frames with stainless-steel machine screws, spaced 18 inches o.c.
 - 1. Louver Screen Frames: As manufactured by The Airlite Co; to sizes indicated on Drawings.
 - 2. Fabrication: Mitered corners.
 - 3. Metal: Roll formed aluminum.
 - 4. Finish: Mill finish, unless otherwise indicated.
 - 5. Type: Rewirable frames with a driven spline or insert for securing screen mesh.
- C. Louver Screening for Aluminum Louvers: As manufactured by The Airlite Co.
 - 1. Insect Screening: Aluminum, 18-by-16 mesh, 0.012-inch wire.

2.05 BITUMINOUS PAINT

- A. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Protect all aluminum in contact with concrete, plaster, masonry, steel or galvanized metal with a coating of bituminous paint. Prepare substrates and openings using methods recommended by manufacturer for achieving best result for substrates under project conditions.
- B. Install louvers as shown in the Contract Drawings and as shown in the SMACNA Architectural Sheet Metal manual.
 - 1. Locate units and place level, plumb, and at indicated alignment with adjacent work.
 - 2. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
 - 3. Provide perimeter reveals and openings of uniform width for sealants and joint fillers as indicated on Drawings.
 - 4. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

- C. Provide insect screens on all louvers. Install on the interior side. Use stainless steel screws throughout.
- D. Install sill flashing as shown detailed and as required to provide a watertight installation.
- E. Install sheet metal drip at head of louvers where shown.
- F. Apply sealant "B" all around frame, inside and outside in accordance with the requirements of Section 07900. Install concealed gaskets, flashings, joint fillers, and insulation, as installation progresses, where weathertight joints are required.

3.02 ADJUSTING, CLEANING AND PROTECTION

- A. Protect products from damage until completion of project. Use temporary protective coverings where needed and approved by manufacturer. Remove protective covering at the time of Substantial Completion.

END OF SECTION

BID FORMS

CITY OF SANTA ROSA

STATE OF CALIFORNIA

MAYACAMAS PUMP STATION ROOF REPLACEMENT

The work to be performed and referred to herein is in the City of Santa Rosa, California and consists of improvements to be constructed in accordance with the provisions of the Invitation for Bids, containing the Notice to Bidders, the Special Provisions, the Project Plan(s), the Bid Forms and the Contract, all of which are by reference incorporated herein, and each Addendum, if any is issued, to any of the above which is also incorporated by reference herein.

TO THE AWARD AUTHORITY OF THE CITY OF SANTA ROSA

The undersigned, as bidder, declares that the only person or parties interested in this bid as principals are those named herein; that this bid is made without collusion with any other person, firm, or corporation; that Contractor has carefully examined the Project Plans, Invitation for Bids and conditions therefor, and is familiar with all bid requirements, that Contractor has examined this Contract and the provisions incorporated by reference herein, and Contractor hereby proposes, and agrees that if its bid is accepted by the City, Contractor will provide all necessary machinery, tools, apparatuses, and other means of construction, and to do all the work and furnish all the materials and services required to complete the construction in accordance with the Contract, the Special Provisions, the Project Plan(s), and Addenda to any of the above as incorporated by reference, in the time stated herein, for the unit prices and/or lump sum prices as follows:

NAME OF BIDDER: _____

Contract #: C02273

Project Title: MAYACAMAS PUMP STATION ROOF REPLACEMENT

| Line # | Description | Units | Quantity | Unit Price | Total Price |
|-----------|-----------------------------|-------|----------|---------------|----------------|
| 1 | ROOF AND LOUVER REPLACEMENT | LS | 1 | \$_____ | \$_____ |

Total: \$_____

In the case of any discrepancy between the unit price and the total set forth for the item, the unit price shall prevail; provided, however, that if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any reason, or is omitted, or in the case of lump sum items, is not the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

1. As to lump sum items, the amount set forth in the "Total" column shall be the unit price;
2. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The Total Base Bid shall be the sum of the "Total" column. In case of discrepancy between the sum of the "Total" column and the amount entered as Total Base Bid, the sum of the "Total" column shall prevail. The bid comparison will be based on the sum of the "Total" column for each bidder.

If this Contract Bid is accepted by the City and the undersigned fails to execute the Contract and to give all the bonds required under the Contract, with a surety satisfactory to the Award Authority of the City of Santa Rosa, within ten calendar days after bidder has received the Notice of Award from the Engineer, then the Award Authority may, at its option, determine that the bidder has abandoned the Contract, and thereupon this bid and the acceptance thereof shall be null and void, and the forfeiture of the security accompanying this bid shall be in accordance with California Public Contract Code section 20172.

The undersigned understands and agrees that the City is not responsible for any error or omissions on the part of the undersigned in making this bid.

The bidder to whom the Contract is awarded agrees to execute the Contract in favor of the City, in the form attached, and to deliver any and all required bond(s) and insurance certificates within ten calendar days from the date of Contractor's receipt of the Notice of Award. Following the award of the Contract, Contractor shall commence work within ten calendar days from the day authorized in the Notice to Proceed and diligently prosecute the same to completion in accordance with Section 8-1.04.

LIST OF SUBCONTRACTORS

NAME OF BIDDER: _____

The following is a list of each subcontractor who will perform work or labor or render services to the undersigned for the construction of the project in an amount in excess of ½ of 1% of the total amount of this bid.

The undersigned agrees that any portion of the work in excess of ½ of 1% of the total amount of this bid and for which no subcontractor is designated herein will be performed by the undersigned.

| SUBCONTRACTOR NAME | SUBCONTRACTOR LICENSE NUMBER | SUBCONTRACTOR DIR REGISTRATION NUMBER | SUBCONTRACTOR BUSINESS ADDRESS | DESCRIPTION OF WORK (ITEM NO.) |
|-----------------------|---------------------------------|--|-----------------------------------|--------------------------------------|
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

LIST OF PREVIOUS SIMILAR JOBS

NAME OF BIDDER:

[illegible]

NONCOLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid. The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

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

NOTE: The above Noncollusion Declaration is part of the Contract Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Noncollusion Declaration.

BID BOND AFFIDAVIT AND BIDDER'S SIGNATURE PAGE

Accompanying this bid is a guaranty in the form of (Notice: Insert the words "cash \$," "Cashier's Check," "Certified Check," or "Bidder's Bond" as the case may be):

in an amount equal to at least ten percent of the total of this bid.

The undersigned further agrees that if Contractor does not execute the Contract and deliver the necessary bonds to the City within the period of time specified in this Invitation for Bids, the proceeds of the security accompanying this bid shall become the property of the City of Santa Rosa, California, and this bid and the acceptance thereof may, at the option of the City, be considered null and void.

The undersigned is licensed in accordance with an act providing for the registration of Contractors, License No. _____, Class _____, expiration date _____.

The undersigned is registered with the Department of Industrial Relations, Registration No. _____.

IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager of the corporation; if a partnership, state true name of partnership, also the names of all partners in the partnership; if the bidder is a sole proprietor, state the business name and the proprietor's name in full.

Secretary of State Business Entity Number: _____.

Business Address

Telephone Number

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

BIDDER'S SIGNATURE: _____

TITLE: _____

DATE: _____

CONTRACT

CITY OF SANTA ROSA

CALIFORNIA

CONTRACT NO. C02273 MAYACAMAS PUMP STATION ROOF REPLACEMENT

This Contract is made and entered into as of date to be added upon award at Santa Rosa, California, between the City of Santa Rosa ("City") and _____ of _____ ("Contractor").

ARTICLE I - For and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by City, and under the conditions expressed in the required bonds hereunto annexed, Contractor agrees that for the benefit of City, at its own cost and expense, to do all the work and furnish all the materials, except such as are mentioned in the Special Provisions to be furnished by City, necessary to construct and complete the work herein described in a good, workmanlike, and substantial manner. The work embraced herein shall be done in accordance with the Standard Specifications of the State of California Department of Transportation, dated 2010, insofar as the same may apply (Standard Specifications); in accordance with the City of Santa Rosa Construction Specifications for Public Improvements (City Specifications); in accordance with the City of Santa Rosa Design and Construction Standards, (City Standards); in accordance with the State of California Department of Transportation Standard Plans, dated 2010 (Standard Plans), (collectively, "Contract Documents") and in accordance with the Special Provisions hereinabove set forth, all of which are hereby incorporated into and made part of this Contract.

The work to be performed is further shown upon a plan consisting of 7 sheets entitled, Mayacamas Pump Station Roof Replacement, File Number 2020-0018, approved by the Deputy Director of Transportation and Public Works, hereinafter referred to as the Project Plan(s).

ARTICLE II - Contractor agrees to receive and accept the following prices as full compensation for furnishing all materials and doing all the work contemplated and embraced in this Contract; also for all loss or damages arising out of the nature of the work aforesaid, or from the acts of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by City and for all expenses incurred by or in consequence of the suspension or discontinuance of work, and for well and faithfully completing the work, and the whole thereof in the manner and according to the Project Plans and Invitation for Bids therefor, and the requirements of the Engineer under them to wit:

| ITEM NUMBER | QUANTITY | DESCRIPTION | UNIT PRICE | TOTAL |
|--|----------|-------------|------------|----------|
| | | | \$ _____ | \$ _____ |
| TOTAL BASE BID (SUM OF "TOTAL" COLUMN) | | | \$ _____ | |

**BID ITEMS IN THIS SECTION WILL BE INSERTED
UPON AWARD OF THE CONTRACT AND SHALL BE
THE SAME AS THOSE BID UPON.**

ARTICLE III - City and Contractor hereby promise and agree that Contractor shall provide the materials and do the work according to the terms and conditions herein contained and referred to, for the prices aforesaid, and City hereby agrees to pay for the same at the time, in the manner, and upon the conditions set forth; and the parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to full performance of the covenants herein stated.

ARTICLE IV - By execution of this Contract, Contractor hereby represents and certifies that Contractor is aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor hereby agrees to comply with such provisions before commencing the performance of the work of this Contract.

ARTICLE V - It is further expressly agreed by and between the parties hereto that the Invitation for Bids, containing the Notice to Bidders including any required Bonds, the Contract Documents, and any Addenda are all essential parts of this Contract and are specially referred to and by such reference made a part hereof. In the event of any conflict in the provisions thereof, the terms of said documents shall control each over the other, in the following order:

1. Special Provisions
2. Project Plans
3. City Standards
4. City Specifications
5. Standard Specifications
6. Standard Plans

ARTICLE VI - Contractor agrees to commence work pursuant to this Contract within ten calendar days from the date authorized in the Notice to Proceed and to diligently prosecute the same to completion in accordance with Section 8-1.04C of the Special Provisions.

This Contract shall not be transferred or assigned without the prior written consent of City, which may be withheld by City in its sole and absolute discretion.

If Contractor is a corporation, two corporate officers of Contractor, one from each of the following two groups shall execute this Contract: a) the chairman of the board, president or any vice-president; b) the secretary, any assistant secretary, chief financial officer, or any assistant treasurer. The name and title of the corporate officers shall be printed under the signature.

In witness whereof, the parties hereto have executed this Contract as of the date first written above.

City:

City of Santa Rosa,
a Municipal corporation

By: _____

Title: _____

ATTEST:

By: _____

Title: _____

Approved as to form:

By: _____

Office of City Attorney

Contractor:

Name of Contractor,
Type of entity

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____