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GOLETA WEST SANITARY DISTRICT

PROJECT MANUAL HEADQUARTERS, BUILDING UPGRADES

PROJECT NO. 13-04

NEW ADMINISTRATION BUILDING

2023



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GOLETA WEST SANITARY DISTRICT

PROJECT MANUAL HEADQUARTERS, BUILDING UPGRADES

PROJECT NO. 13-04

PART I - BID AND AGREEMENT FORMS AND BONDS

NEW ADMINISTRATION BUILDING

2023



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GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04

NEW ADMINISTRATION BUILDING

PROJECT MANUAL

PART I - BID AND AGREEMENT FORMS AND BONDS

TABLE OF CONTENTS

Invitation to Bid

Instructions to Bidders

Bid Forms

Bid (Proposal)

Bid Schedule

AIA G702, 1992

AIA G703, 1992

List of Subcontractors

Non-Collusion Affidavit

Certification of Bidder's Experience and Qualifications

Bid Bond (Bid Security Form)

Site Visit Affidavit

Superintendent Qualification Form

Agreement Forms and Bonds

Agreement

Worker's Compensation Certificate Performance Bond

Payment Bond

Certificate of Liability Insurance

Contract Administration Forms

Notice of Award

Notice to Proceed

Change Order

Work Change Proposal

Consent of Surety

Notice of Completion

Conditional Waiver and Release, Upon Progress Payment

Conditional Waiver and Release, Upon Final Payment

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GOLETA WEST SANITARY DISTRICT

PO BOX 4, GOLETA, CALIFORNIA 93106-0004

INVITATION TO BID

HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04

NEW ADMINISTRATION BUILDING

N-1 NOTICE IS HEREBY GIVEN:

Sealed Bids will be received at the Office of Brian McCarthy, General Manager/Superintendent of Goleta West Sanitary District, at UCSB Campus Parking Lot 32, Santa Barbara, California 93106 for **Headquarters, Building Upgrades, Project 13-04, New Administration Building** in strict accordance with the Contract Documents, on file at the District Offices.

N-2 DATE OF BID OPENING:

Bids will be received at the Office of Brian McCarthy, General Manager/Superintendent, of Goleta West Sanitary District, until **2:00 PM PST on Wednesday, December 20, 2023**, after which time the sealed Bids will be publicly opened and read aloud.

N-3 LOCATION OF THE WORK:

The Work is to be constructed at the Headquarters of Goleta West Sanitary District. The Site, which does not have a specific street address, is on Santa Barbara Municipal Airport property in the City of Santa Barbara, Santa Barbara County, State of California. It is located at Parking Lot 32 on the campus of the University of California, Santa Barbara, adjacent to the Police Station. Associated utility service work may extend beyond the boundary of the Goleta West Sanitary District facility.

N-4 DESCRIPTION OF THE WORK:

GOLETA WEST SANITARY DISTRICT, Headquarters, Building Upgrades, PROJECT 13-04, NEW ADMINISTRATION BUILDING

The Work encompasses deconstruction of approximately 1,170 SF of existing single-level, wood and masonry structures, concrete slabs, foundations, utilities, and infrastructure. In addition, general Site preparation will be necessary to accommodate new construction.

New construction will encompass a 3,298 SF single-level, on-grade, structure to house Administrative Offices, Public Lobby and Service Counter, Board Room, and office support spaces. Access to the Public Lobby and a separate, exterior, access to Board Room will be provided under a shaded colonnade, forming the north boundary of a 1,520 SF landscaped Courtyard.

The Site, located within a FEMA designated Special Flood Hazard Area, is protected from flooding by a FEMA compliant Perimeter Flood Wall. The Perimeter Flood Wall is comprised of permanent concrete masonry and cast-in-place concrete walls and demountable flood barriers. The Perimeter Flood Wall shall remain in place, and functional, throughout the course of construction.

New construction shall occur immediately adjacent to components of the Perimeter Flood Wall. Portions of the Perimeter Flood Wall will be incorporated into the new work, including the cast-in-place concrete wall along the south boundary line. Consequently, these must be protected from damage and maintained clear and accessible for their function, as part of the Perimeter Flood Wall.

Additional work includes Landscaping west of the Administration Building, at the north end of the entire Site, and at a raised, planter along the east face of the Administration Building.

Finish Site Work shall include paving of the entire work yard, including removal, and proper disposal, of any and all existing paving. Additionally, placement of pervious concrete pavement east of the new Administration Building will accommodate three parking spaces.

The Work shall include installation of two (2) Electric Vehicle Charging Stations, east of existing Pump Station #1, which has been previously prepped to accept the equipment.

N-4A LEED CERTIFICATION

The Project will be seeking Leadership in Energy and Environmental Design (LEED) Certification to demonstrate the District's commitment to sustainability. Certification, under the auspices of the Green Building Certification Inc. (GBCI), requires submittal of documentation as evidence of compliance with criteria necessary to obtain Certification. This includes credit for sustainable construction practices, specified. The Contractor shall participate in these efforts by maintaining and providing documentation of requisite sustainable construction practices, as assigned.

N-5 BID ACCEPTANCE

The District shall accept BIDs for Work identified as:

**GOLETA WEST SANITARY DISTRICT, HEADQUARTERS, BUILDING UPGRADES,
PROJECT 13-04, NEW ADMINISTRATION BUILDING**

The District will award the work to the lowest, responsible, and responsive BID.

N-6 COMPLETION OF WORK:

Work included in **Project No. 13-04, NEW ADMINISTRATION BUILDING** and associated Sitework shall be completed within two hundred and seventy (270) consecutive calendar days after commencement date stipulated in the Notice to Proceed. Failure to complete the Work within the time frame stated (above) shall result in Liquidated Damages being assessed.

N-7 BID SUBMITTAL

It is the Bidder's responsibility to ensure that the Bid is delivered by the time stipulated, to the designated location, in the defined format, inclusive of the required documentation, in a sealed envelope, labeled as directed.

N-8 BID SECURITY

Bid shall be accompanied by a certified or cashier's check or Bid Bond in the amount of Ten (10%) Percent of the total bid price, payable to Goleta West Sanitary District. This Bid Security is a guarantee that the Bidder, if its Bid is accepted, will promptly obtain the required Bonds and Insurance and will prepare the required submittal documents and execute the Agreement. A bid will not be considered unless one of the allowed forms of Bid Security as set forth, in this Item N-8, is enclosed with it.

N-9 BIDS TO REMAIN OPEN:

Bidder shall guarantee Total Bid Price for sixty (60) calendar days from the date of Bid opening.

N-10 CONTRACTOR'S LICENSE CLASSIFICATION:

The Contractor shall possess a valid Class A contractor license. The bidder shall possess a valid license in the specified classification at the time that the bid is submitted and at all times during performance of the Work, as required under California Business and Professions Code - Section 7028.15, unless exempt thereunder. Failure to possess the specified license at the time of submitting a bid shall render the bid non-responsive and result in the bid being rejected.

N-11 CALIFORNIA PREVAILING WAGE RATE REQUIREMENTS:

In accordance with California Labor Code Sections 1770 *et seq.* as amended, the Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages in accordance with the standards set forth in Section 1773 for the locality in which the Work is to be performed. A copy of said prevailing wage rates is on file at the Office of the General Manager/Superintendent.

The Contractor and its Subcontractors shall pay not less than said specified prevailing rates to all workers employed by them in the execution of the Work and shall post a copy of said prevailing wage rates at the project site.

The Bidder shall comply with all applicable provisions of Section 16100 of Title 8 of the California Code of Regulations, which require CONTRACTOR to keep accurate records of the Work performed as provided in Labor Code Section 1812, to allow the District to inspect Bidder's payroll records pursuant to Labor Code Section 1776 and Section 16400(e) of Title 8 of the California Code of Regulations, and to comply with all other requirements imposed by law.

N-12 REGISTRATION WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS:

The District will not accept a Bid from or enter into the Agreement with a Bidder without proof that the Bidder and its sub-contractors are registered with the California Department of Industrial Relations to perform public work under Labor Code Section 1725.5, subject to limited legal exceptions. The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The District will provide notice to the DIR of the award of the Work within five (5) days of the issuance of the Notice of Award.

N-13 PRE-BID CONFERENCE AND VISIT TO WORK SITE:

1. A Pre-Bid Conference and walk-through of the project site and existing facilities will be conducted by the District to acquaint the bidders with the site and facility conditions.
2. A Pre-Bid Conference and walk-through will be conducted at **08:30 AM PST, on Wednesday, November 29, 2023.**
3. Attendees to meet in Goleta West Sanitary District, Administration Building, Board Room located off Parking Lot 32 of the University of California, Santa Barbara.
4. If requested, by the District, all attendees of the Pre-Bid Conference and walk-through will be required to review and execute a COVID-19 Waiver and Release of Liability form which will be provided by the District.
5. All attendees of the Pre-Bid Conference and walk-through must comply with protocols relating to COVID-19 as set forth by then-existing Center for Disease Control guidance or mandates.

O-14 CONTRACT DOCUMENTS:

1. The Contract Documents are available for inspection, without charge, at the Office of the General Manager/Superintendent of Goleta West Sanitary District. Appointment required.
2. Plans are on file, and online, at Santa Barbara Contractors Association, Plan Room, 424 Olive Street, Santa Barbara, CA (805) 884-1100, sbcaplanroom.com
3. Complete sets of the Contract Documents are available, for purchase at cost, at Tri-Co Reprographics, 720 E Holly St, Santa Barbara, CA 93103, (805) 966-1701

P-15 SUBSTITUTION OF SECURITIES IN LIEU OF CONTRACT RETENTION:

In accordance with Section 22300 of the California Public Contract Code, the Contractor will have the option of posting securities of equal or greater value in lieu of a cash retention.

N-16 WITHDRAWAL OF BIDS:

The Bidder may withdraw its Bid at any time prior to the date and hour set for opening of bids upon presentation of a written request to the Office of Brian McCarthy, General Manger/Superintendent of the Goleta West Sanitary District at UCSB Campus Parking Lot 32, Santa Barbara, California 93106, signed by an authorized representative of the Bidder or by the person filing the Bid.

N-17 DISTRICT'S RIGHTS RESERVED:

The District reserves the right to reject any, or all, bids or to waive any irregularities or informalities in any bid or in the bidding as may be in the best interest of the District.

BY ORDER OF GOLETA WEST SANITARY DISTRICT



Brian McCarthy
General Manager/Superintendent, Goleta West Sanitary District

November 07 2023

Date

END OF INVITATION TO BID

GOLETA WEST SANITARY DISTRICT

PO BOX 4, GOLETA, CALIFORNIA 93106-0004

INSTRUCTIONS TO BIDDERS

HEADQUARTERS, BUILDING UPGRADES

Project No. 13-04

NEW ADMINISTRATION BUILDING

1. DEFINED TERMS

Terms used in these ***INSTRUCTIONS TO BIDDERS*** and the *INVITATION TO BID* shall have the meanings assigned in the General Conditions. The term "BIDDER" shall mean one who submits a BID directly to the DISTRICT, as distinct from a sub-bidder, who submits a BID to a BIDDER..

2. BIDDERS EXPERIENCE AND QUALIFICATIONS

In selecting the lowest responsive, responsible Bidder, consideration will be given not only to the financial standing of the Bidder, but also to the general experience and qualifications of the Bidder for the performance of the Work covered by the Bid. To this end, each Bid shall be supported by a statement of the Bidder's experience as of recent date on the form entitled "Certification of Bidder's Experience and Qualifications", bound herein. No Bid for the Work will be accepted from a contractor who does not hold a valid contractor's license in the State of California for the classifications named in the Invitation to Bid at the time of opening Bids.

3. DISQUALIFICATION OF BIDDERS

More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the District believes that collusion exists among the Bidders, all Bids may be rejected.

4. BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND THE SITE

It is the Bidder's responsibility to thoroughly examine the Contract Documents; visit the Project Site to become familiar with existing conditions that may affect cost, progress, or performance of the Work; consider federal, state, and local laws and regulations that may affect cost, progress, or performance of the Work; study and carefully correlate the Bidder's observations with the Contract Documents; comply with all General Conditions and Supplementary General Conditions, and notify the Architect of any conflicts, or discrepancies noted.

5. INTERPRETATIONS

All questions about the meaning or intent of the Contract Documents are to be directed, in writing, to the attention of the Office of **Brian McCarthy, General Manager/Superintendent**, Goleta West Sanitary District. Responses will be issued to all, recorded, Bidders. Interpretations or clarifications considered necessary by the Architect, in response to such questions, will be resolved by the issuance of Addenda to the Contract Documents. Questions received less than seven (7) days prior to the date of opening bids may not be answered. Only questions that have been resolved by formal written Addenda will be binding. Oral and other interpretations or clarifications shall be without legal or contractual effect.

6. SUBMITTAL OF BIDS

The Bids shall be delivered by the time and to the place stipulated below and in the *INVITATION TO BID*. It is the Bidder's sole responsibility to see that its Bid is received in proper time. Bids will not be accepted after the time stipulated for receiving bids.

7. ADDRESS AND MARKING OF BIDS:

- A. Bids, including the requisite documents in the stipulated format, shall be submitted in a sealed envelope addressed to the Office of **Brian McCarthy, General Manager/ Superintendent, Goleta West Sanitary District.**
- B. The envelope containing the Bid submittal shall be plainly marked, at the upper left-hand corner, with the (legal) name and address of the Bidder, followed by the words, "**Bid for GOLETA WEST SANITARY DISTRICT, HEADQUARTERS, BUILDING UPGRADES, PROJECT NUMBER 13-04, NEW ADMINISTRATION BUILDING**" below which the address where the Bid is to be delivered, or mailed, and the date and hour of the Bid Opening shall be written.
- C. The Bid Security stipulated in Item N-8 of the Invitation to Bid, shall be enclosed in the Bid envelope, along with the Bid documents.
- D. It is the responsibility of the prospective Bidder to ensure that the Bid is received at the Office of the General Manager/Superintendent PRIOR to, or no later than, the date and time stipulated in the Invitation to Bid. Bids arriving later than the time stated in the Invitation to Bid, regardless of the reason, shall not be accepted, and will be returned unopened to the Bidder.
- E. Bids that are mailed, or sent by means other than hand delivery, shall be within a sealed envelope as described above and enclosed within an outer mailing, or handling envelope, with the notation "**BID for GWSD Project 13-04, Enclosed,**" clearly visible, on the outer envelope.

8. BID ADMINISTRATION:

- A. Prior to the opening of the Bids, other than as allowed by these Instructions to Bidders, there shall be no communication with the General Manager/Superintendent of the District, any District staff, District Board members, or the Architect, and/or the Architect's Consultant's relative to the Project or Bid.
- B. All questions and/or requests for clarification or interpretations of the Contract Documents must be submitted in writing and shall be directed to the attention of the Office of **Brian McCarthy, General Manager/Superintendent, Goleta West Sanitary District.**
- C. All questions and responses shall be provided to all bidders. Any changes or clarifications resulting from questions shall be issued in the form of Addenda to the Contract Documents.
- D. No questions or communication relative to the Bid, shall be accepted later than Seven (7) calendar days prior to the Bid date, to allow sufficient time for response.

9. BID SECURITY, BONDS, AND INSURANCE:

Bids shall be accompanied by a certified or cashier's check or approved Bid Bond in the amount stated in the Invitation to Bid. The certified or cashier's check or bond shall be made payable to the District and shall be given as a guarantee that the Bidder, if awarded the Work, will enter into an Agreement with the District and will furnish the necessary insurance certificates, Payment Bond, and Performance Bond. Each of said bonds and insurance certificates shall be in the amounts stated in the General Conditions. In case of refusal or failure of the successful Bidder to enter into said Agreement, the certified or cashier's check or Bid Bond, shall be forfeited to the District. If the Bidder elects to furnish a Bid Bond as its security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it, in form.

10. RETURN OF BID SECURITY

Within fifteen (15) days after award of the Contract, the District will return all bid securities accompanying Bids that are not under consideration for award. All other Bid securities will be held until the Agreement has been finally executed. They will then be returned to the respective Bidders whose Bids they accompany.

11. BID FORM

The Bid shall be made on the Bid Schedule sheets bound herein. All bid items shall be properly filled out. Where so indicated in the Bid Documents, Bid Price shall be shown in words and figures, and any conflict between the words and figures, the words shall govern. The envelope containing the Bid shall be plainly marked in the upper left-hand corner with the name and address of the Bidder. The sealed envelope containing the Bid shall also bear the words "**Bid for GWSD Headquarters, Building Upgrades – PROJECT NO. 13-04 New Administration Building**" followed by the address where the bids are to be delivered or mailed, and the date and hour of opening Bids.

The following items are to be executed and submitted with the Bidder's Bid (failure to submit any these items may cause the Bid to be rejected as nonresponsive):

- A. Bid Form (Bid Certificate).
- B. Bid Schedule
- C. List of Subcontractors
- D. Non-Collusion Affidavit
- E. Certification of Bidder's Experience and Qualifications
- F. Bid Security - A bid guarantee in the amount of ten percent (10%) of the bid amount must accompany the bid. The bid guarantee must be in the form of one of the following:
 - i. Certified or cashier's check made payable to Goleta West Sanitary District
 - ii. Bid bond executed by an admitted surety insurer authorized by the California State Department of Insurance to transact business in California, made payable to Goleta West Sanitary District.
- G. Site Visit Affidavit
- H. Superintendent Qualification Form

12. QUANTITIES OF WORK

The QUANTITY provided as a part of the Bid submittal in the Bid Schedule, enumerating the number of units of work, service, systems, or material that comprise that line item, shall not limit the responsibility of the Bidder. The Bidder shall be responsible for the entire scope of work described in the Drawings and defined in the Specifications.

- A. **AIA form G702, 1992- Application and Certificate for Payment**, shall be used as the form for monthly Application for Payment.
- B. **AIA form G703, 1992- Continuation Sheet**, shall be used as the documentation for the Schedule of Values upon entering into a formal Agreement for the Work, following Notice to Award. It shall be submitted, along with the Application for Payment, monthly.

13. DISCREPANCIES IN BIDS

The Bidder shall furnish a price for all items in the Bid Schedule. Failure to do so will render the Bid as non-responsive and may cause its rejection. Where a "TOTAL," listed in a "line item" in the Bid Schedule, does not equal the product of the unit price and quantity listed, on that same line; the lower amount shall govern and the "TOTAL Bid" amount will be corrected accordingly. The Contractor shall be bound by such correction.

14. WITHDRAWAL OF BID

The Bid may be withdrawn by the Bidder by means of a written request, signed by the Bidder or its properly authorized representative. Such written request must be delivered to the place stipulated in the Invitation to Bid prior to the scheduled closing time for receipt of Bids.

15. MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS

Unauthorized conditions, limitations, or provisos attached to the Bid will render it informal and may cause its rejection as being non-responsive. The completed Bid forms shall be without interlineations, alterations, or erasures. Alternatives and Substitutions in Bids will not be considered unless expressly called for in the Invitation to Bid, or by formal addendum. Oral, Electronic, or Telephone Bids or modifications will not be considered.

16. SUBSTITUTIONS

The Work, if awarded, will be based on the materials, products, and systems shown on the Drawings and defined and described in the Technical Specifications, Section 01 33 00. Specific product, material, and trade names, where used as the basis of design, is to establish the minimum level of required performance, quality, and aesthetic. Any reference to specific products, materials, or trade names shall be read as though followed by the phrase, "or equal." Requests for substitutions will be accepted after the Effective Date of the Agreement. The procedure for submittal, by the Contractor, of an alternative for consideration is set forth in Section 01 33 00 of the Technical Specifications. Unless the equivalence in performance, quality, and aesthetic, as criteria, is proven, by the Contractor, and deemed acceptable; substitution of the material, product, or system specified will not be allowed.

No initial project bid shall include an alternative material, product or system. Costs in the Bid Schedule shall be based solely on the materials, products, and systems specified. Alternatives shall not be accepted "by default," if included within base bid. If it is discovered, after entering into an agreement with the prevailing Contractor, that the cost of a specified item is based on an Alternative not submitted for consideration; the Contractor shall provide one of the specified items, in lieu of the alternative, at no additional cost to the District.

17. SUBCONTRACTORS

Bidder shall identify each Subcontractor who will perform Work under this Bid, in excess of one-half of one percent (.005) of the Contractor's Total Bid Price. Bidder shall submit, with their Bid, a List of each Subcontractor's name, business address, and the portion of work, labor, or service that will be provided, in or about the Work.

Circumventing by Bidder of the requirement to list Subcontractors by the device of listing one Subcontractor who will in turn sublet portions constituting the majority of the work covered by this Contract shall be considered a violation of the California Subletting and Subcontracting Fair Practices Act, Division 2, Part 1, Chapter 4 of the California Public Contract Code and shall subject Contractor to the penalties set forth in Sections 4110 and 4111 of said Code. Substitutions of Subcontractors identified in the List of Subcontractors shall be granted only for those reasons allowed by the California Public Contract Code Section 4107.5.

18. ACKNOWLEDGEMENT

The submittal of a Bid will constitute an incontrovertible representation by the Bidder that, without exception, the Bid is premised upon performing the Work required by the Contract Documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all the terms and conditions for performance of the Work.

19. AWARD OF CONTRACT

If awarded, the Work will be awarded to the lowest, responsible, and responsive Bidder, whose BID, complies with all of the requirements prescribed. It is the District's intent to select the BID which will result in the lowest, total, Contract Amount, for the Scope of Work described. Unless otherwise specified, any such award, will be made within the period stated in the *INVITATION TO BID* that the Bids are to remain open, unless extended by formal addendum.

20. BID PROTESTS

Bid protests must be submitted, in writing, within five (5) calendar days of the Bid opening addressed to: **Brian McCarthy, General Manager/Superintendent, Goleta West Sanitary District**. The protest document shall contain the name, address and telephone number of the protesting party along with a complete statement of the basis for the protest and shall refer to the specific portion of any document or documents that support the protest. The party filing the protest shall concurrently transmit a copy of the protest to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest, including but not limited to, all other Bidders on the Project. The District will issue a decision on the protest and may hold a hearing to assist in its determination of the merits of the protest. The procedures and time limits set forth in this paragraph are mandatory and are the Bidder's sole and exclusive remedy in the event of a Bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a claim under the California Tort Claims Act (Gov. Code 910 *et seq.*) or other legal proceedings.

21. EXECUTION OF AGREEMENT

The Bidder to whom award is made shall execute a written Agreement with the District on the form of agreement provided, shall secure all insurance, and shall furnish all certificates and bonds required by the Contract Documents within ten (10) calendar days after receipt of the Notice of Award. Failure or refusal to enter into an Agreement as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for an annulment of the award and forfeiture of the Bid Security. If the lowest responsive, responsible bidder refuses or fails to execute the Agreement, the District may award the Contract to the second lowest responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the District may award the Contract to the third lowest responsive, responsible Bidder. On the failure or refusal of the second or third lowest Bidder to execute the Agreement, each bidder's Bid Securities shall be forfeited to the District.

22. WORKER'S COMPENSATION REQUIREMENT

The Bidder should be aware that in accordance with laws of the State of California, the Bidder will, if awarded the Contract, be required to secure the payment of compensation to its employees and execute the Worker's Compensation Certification.

23. BID PRICES

Bid prices shall include everything necessary for the completion of the project and fulfillment of the Contract including but not limited to: furnishing all labor, materials, equipment, tools, utilities, temporary facilities and all management, superintendence, bonds, insurance, and services, except as may be provided otherwise in the Contract Documents. Bid prices shall include all applicable federal, state, and local sales and use taxes. In the event of a difference between a price quoted in words and a price quoted in figures for the same quotation, the words shall be the amount bid.

24. BIDDER'S SIGNATURE AND AUTHORITY

If the bid is made by an individual, bidder's name, signature, and mailing address must be shown; if made by a firm or partnership, a list of the partners, and the signature of at least one of the general partners must be shown; if made by a corporation, the bid shall show the name of the state under the laws of which the corporation is chartered, the name and mailing address of the corporation, and the title of the person who signs on behalf of the corporation.

If the bid is made by a corporation, a certified copy of the bylaws or resolution of the Board of Directors of the corporation shall be furnished showing the authority of the officer signing the bid to execute contracts on behalf of the corporation. If the bid is made by a joint venture, the bid shall be signed by a representative of one of the joint venture firms. Additionally, the bid shall include a copy of the resolution or agreement empowering the representative to execute the bid and bind the joint venture.

END OF INSTRUCTIONS TO BIDDERS

BID

BID TO: GOLETA WEST SANITARY DISTRICT, SANTA BARBARA COUNTY, CALIFORNIA

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into Agreement with the Goleta West Sanitary District in the form included in the Contract Documents to perform the Work as specified or indicated in said Contract Documents entitled:

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

Bidder accepts the terms and conditions of the Contract Documents, including without limitation those in the Invitation to Bid and Instructions to Bidders, dealing with the disposition of the Bid Security.

This Bid will remain open for the period stated in the Invitation to Bid unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the Instructions to Bidders, and will furnish the Certificates of Insurance, Payment Bond, Performance Bond, and Permits required by the Contract Documents.

Bidder has examined copies of all the Contract Documents including the following Addenda (receipt of which is hereby acknowledged):

Number _____ Date _____ Number _____ Date _____

Number _____ Date _____ Number _____ Date _____

Bidder has familiarized itself with the nature and extent of the Contract Documents, the Work, the site, the locality where the Work is to be performed, the legal requirements (federal, state, and local laws, ordinances, rules, and regulations), and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as Bidder deems necessary.

To all the foregoing, and including the Bid Schedule, List of Subcontractors, Non-collusion Affidavit, Certification of Bidder's Experience and Qualifications, Certified or Cashier's Check or Bid Bond, Site Visit Affidavit and Superintendent Qualification Form contained in these Bid Forms, said Bidder further agrees to complete the Work required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefore the Contract Price based on the Lump Sum or Unit Bid Price(s) named in the Bid Schedule.

The undersigned represents and warrants to Goleta West Sanitary District that it is authorized to execute this Bid and obligate the Bidder to this Bid, that such authority was duly passed and adopted by such entity which is the official act and deed of the entity, and that the undersigned shall indemnify and defend Goleta West Sanitary District if the undersigned is not authorized to act on behalf of the entity as indicated above.

All representations made by Bidder in this Bid are made under penalty of perjury.

Dated: _____

Bidder: _____

By: _____
(Signature)

Printed: _____

Title: _____

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING
BID SCHEDULE
(To Accompany Bid)**

ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT COST in \$	TOTAL
1	General Requirements				
2	Insurance, Bonds, Mark-ups, Fees, Escalation, and Tax				
3	Site Work				
4	Deconstruction				
5	Concrete and Reinforcing				
6	Masonry and Reinforcing & Accessories				
7	Structural Steel				
8	Cold Formed Metal Framing				
9	Metal Fabrications, Aluminum Grilles				
10	Rough Carpentry, Framing & Wood Sheathing				
11	Thermal Insulation				
12	Profile Metal Wall Panels, Horizontal Standing Seam Zinc Wall Panels				
13	Thermoplastic-Polyolefin (TPO) Roofing and Trim				
14	Metal Flashing and Trim				
15	Sealants and Expansion Control				
16	Roof Accessories				
17	Sealants and Expansion Control				
18	Doors, Frames, and Hardware Access Panels				
19	Sliding, Aluminum Framed Glass Doors & Screens				
20	Aluminum Entrances, Storefronts, Windows, Glazing				
21	Tubular Skylights				
22	Plastic Glazing – Polycarbonate Panels & Mounting Accessories				
23	Gypsum Board Assemblies Resilient Base				
24	Tile				
25	Acoustical Tile Ceilings				
26	Suspended Wood Ceiling				
27	Carpet Tile				

ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE IN \$	TOTAL
28	Painting and Coatings				
29	Toilet Accessories Signage				
30	Portable Fire Extinguishers				
31	Audio Visual Equipment				
32	Casework				
33	Fire-Suppression Systems				
34	Plumbing Systems				
35	Plumbing Fixtures				
36	HVAC Systems, Diffusers, Registers and Grilles				
37	Electrical Systems				
38	Light Fixtures				
39	Electric Vehicle Charging Stations				
40	Solar Array- Power Generation System				
41	Asphalt Paving				
42	Pervious Concrete Paving				
43	Landscaping, Hardscape, Exterior Water Feature, Exterior Furnishings				
TOTALS					

Total Bid Amount in Words - _____

Bid amount of each of the above bid items must be filled in and completed.

The TOTAL Bid Amount shall be provided in both figures and words, as indicated.

In case of discrepancy between words and figures of the total amount, the words shall prevail.

The above amount is for the total cost of the completed Work and includes any and all sales taxes, fees, and levies, which may be applicable.

The undersigned has examined the Site of the proposed Work and is familiar with the Contract Documents and the existing conditions at the Site and surrounding area. The undersigned has checked the above amount and understands that the District will not be responsible for any errors or omissions on the part of the undersigned in making this Bid.

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Continuation Sheet

AIA Document G702[™], Application and Certification for Payment; G702[™]CMA–1992, Application and Certificate for Payment; or G732[™]–2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Subcontractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (Not in D or E)	G		H BALANCE TO FINISH (C – G)	I RETAINAGE (If variable rate)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD		TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)		
	GRAND TOTAL								

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO 13-04
NEW ADMINISTRATION BUILDING
LIST OF SUBCONTRACTORS
(To Accompany Bid)**

The Bidder shall list below the names and business address of each Subcontractor who will perform Work under this Bid in excess of one-half of one percent of the Contractor's Total Bid Price and shall also list the portion of the Work which will be performed by such Subcontractor. **The Contractor shall be solely responsible for the performance of all Subcontractors and ensure that their work is done in accordance with the contract documents and on schedule.** After the opening of bids, no changes or substitutions will be allowed except as otherwise provided by law. The listing of more than one Subcontractor for each item of Work to be performed with the words "and/or" will not be permitted. Failure to comply with this requirement will render the Bid as non-responsive and may cause its rejection.

Work to be Performed	Contractor License No.	% of Total Contract	Subcontractor Name & Address
1. _____	_____	_____	_____ _____ _____
2. _____	_____	_____	_____ _____ _____
3. _____	_____	_____	_____ _____ _____
4. _____	_____	_____	_____ _____ _____
5. _____	_____	_____	_____ _____ _____
6. _____	_____	_____	_____ _____ _____
7. _____	_____	_____	_____ _____ _____
8. _____	_____	_____	_____ _____ _____

9.	_____	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____	_____
11.	_____	_____	_____	_____	_____	_____
12.	_____	_____	_____	_____	_____	_____
13.	_____	_____	_____	_____	_____	_____
14.	_____	_____	_____	_____	_____	_____
15.	_____	_____	_____	_____	_____	_____
16.	_____	_____	_____	_____	_____	_____

Add additional sheets, if necessary.

END OF LIST OF SUBCONTRACTORS

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

NON-COLLUSION AFFIDAVIT EXECUTED BY BIDDER AND SUBMITTED WITH BID
(To Accompany Bid)

State of California)
) ss.
County of _____)

I, _____, being first duly sworn, deposes and says that he or she
(Contractor's Authorized Representative)

is _____ of _____ the party making the foregoing bid that the bid
(Title of Representative) (Contractor's Name)

is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that 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, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Bidder _____

Signature _____

By _____

Title _____

Organization _____

Address _____

END OF NON-COLLUSION AFFIDAVIT

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING
CERTIFICATION OF BIDDER'S
EXPERIENCE AND QUALIFICATIONS
(To Accompany Bid)**

The undersigned Bidder certifies that it is, at the time of bidding, and shall be, throughout the period of the contract, licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California, to do the type of work contemplated in the Contract Documents. Bidder shall further certify that it is skilled and regularly engaged in the general class and type of work called for in the Contract Documents. In Projects involving Federal funds Public Contract Code Section 20103.5 provides that any Bidder not so licensed at the time the Contract is awarded shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractor's State License Board.

The Bidder represents that it is competent, knowledgeable, and skilled in the nature, extent, and conditions of the work to be performed. Bidder acknowledges that conditions inherent to the construction Site may create, during the construction, challenging, difficult, or peculiar situations that may prove hazardous to persons and/or property. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the requisite training, skill, and experience to foresee and to adopt protective measures to safely perform the construction work with respect to such hazards. *(Specifically, deconstruction, excavation, drilled pier placement, and construction requiring work in and around an operating facility with significant critical below grade utilities and infrastructure, some of which may not be documented.)*

The Bidder shall list below at least three (3) projects completed in the last seven (7) years of similar scale and Site complexity that indicate the Bidder's experience as a Contractor. If the Bid is submitted by a Joint Venture, list at least four (4) completed projects. It is acceptable to submit this information on other forms as long as the information required below is included. Failure to provide this information with the Bid may render the Bid non-responsive and may be the basis for rejection of the Bid.

1. Project Name: _____
Owner: _____
Construction Cost: \$ _____
Construction Time: _____ Calendar Days
Owner's Representative: _____
Owner's Telephone No.: _____
Date of Substantial Completion: _____

Name of Bidder

2. Project Name: _____
Owner: _____
Construction Cost: \$ _____
Construction Time: _____ Calendar Days
Owner's Representative: _____
Owner's Telephone No.: _____
Date of Substantial Completion: _____

3. Project Name: _____
Owner: _____
Construction Cost: \$ _____
Construction Time: _____ Calendar Days
Owner's Representative: _____
Owner's Telephone No.: _____
Date of Substantial Completion: _____

4. Project Name: _____
Owner: _____
Construction Cost: \$ _____
Construction Time: _____ Calendar Days
Owner's Representative: _____
Owner's Telephone No.: _____
Date of Substantial Completion: _____

Name of Bidder

Signed this _____ day of _____, 2023

Name of Bidder

Contractor's License No.

Expiration Date

Signature of Bidder

Title of Signatory

END OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING
BID BOND
(To Accompany Bid)**

ALL PERSONS TAKE NOTICE

That _____ as Principal, and
_____ as Surety, are held and firmly bound

unto Goleta West Sanitary District, hereinafter called the "DISTRICT,"

in the sum of _____ Dollars
(Not less than 10 percent of the total amount of the bid)

For the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted to bid to said District to perform the Work required under the bid schedule of the District's Contract Documents entitled:

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13 – 04, NEW ADMINISTRATION BUILDING**

NOW THEREFORE, if said Principal is awarded a contract by said District, and within the time and in the manner required in the "Invitation to Bid" and the "Instructions to Bidders" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required Certificates of Insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. The Surety stipulates and agrees that the obligations of said Surety shall in no way be impaired or affected by an extension of the time within which the District may accept such Bid, and Surety further waives notice of any such extension. In the event it is brought upon this bond by said District and District prevails, said Surety shall pay all costs incurred by said District in such suit, including a reasonable attorney's fees and costs to be fixed by the court.

SIGNED AND SEALED, this _____ day of _____, 2023

Principal
(SEAL)

By: _____

Surety (SEAL)

By: _____

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

END OF BID BOND

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING
SUPERINTENDENT QUALIFICATION FORM
(To Accompany Bid)**

Provide the following information for the proposed Construction Superintendent who will supervise the work on the project. The proposed Construction Superintendent shall have a minimum of Five (5) years of supervisory field experience and at least Two (2) successfully completed projects with similar characteristics (significant deconstruction and construction in an operating facility), listed below.

CONTRACTOR: _____

PROPOSED SUPERINTENDENT: _____

PROJECT: _____ DATE COMPLETED _____

NAME & ADDRESS OF OWNER: _____

CONTACT PERSON: _____ PHONE NUMBER: _____

DESCRIPTION OF WORK:

PROJECT: _____ DATE COMPLETED _____

NAME & ADDRESS OF OWNER: _____

CONTACT PERSON: _____ PHONE NUMBER: _____

DESCRIPTION OF WORK:

END OF SUPERINTENDENT QUALIFICATION FORM

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

AGREEMENT

THIS AGREEMENT is made this _____ day of _____ in the year 2023, by and between the Goleta West Sanitary District, organized and existing in the County of Santa Barbara, under and by virtue of the laws of the State of California, hereinafter designated as the DISTRICT, and

_____ hereinafter designated as the CONTRACTOR.

The DISTRICT and the CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - THE WORK

The CONTRACTOR shall complete in a workmanlike manner, the Work shown, specified, or indicated under the Contract Documents and furnish at the CONTRACTOR's own expense, all labor, materials, equipment, tools, transportation, and services necessary for completing the Work, except for materials, equipment, and services to be furnished by the DISTRICT, if any, and to do everything required by the Contract Documents for the Contract Price for the following Project.:

**GOLETA WEST SANITARY DISTRICT, HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

The work encompasses demolition of 1,170 SF of existing structures, along with associated foundations, and utilities; in addition to Site preparation for construction of a 3,298 SF single-level, on-grade, structure to house Administrative Offices, Public Lobby and Service Counter, Board Room, and support spaces. Access to Lobby and separate exterior access to Board Room is provided under a shaded colonnade, forming the north boundary of a 1,520 SF landscaped Courtyard.

Site is located within a FEMA designated Special Flood Hazard Area. Site is protected from flooding by a FEMA compliant Perimeter Flood Wall. Perimeter Flood Wall is comprised of permanent concrete masonry and cast-in-place concrete walls and demountable flood barriers. Courtyard perimeter wall forms one portion of the Flood Wall and a linear concrete pad/path is the base for demountable Flood Barriers, that protect the north face of the Site.

Perimeter Flood Wall components are to remain in place, and functional, throughout the course of construction. Construction shall occur immediately adjacent to the cast-in-place concrete walls and flatwork, which must be protected from damage.

Additional work includes Landscaping west of the Administration Building, at the north end of the entire Site, and at a linear, raised, planter along the west face of the existing Administration Building. Paving of the work yard, parking immediately east of the new Administration Building, and installation of two (2) Electric Vehicle Charging Stations, east of existing Pump Station #1 is also included within the Scope of Work.

The Project will be seeking Leadership in Energy and Environmental Design (LEED) Certification to demonstrate the District's commitment to sustainability. Certification, under the auspices of the Green Building Certification Inc. (GBCI), requires submittal of documentation as evidence of compliance with stipulated criteria to achieve Certification. This includes credit for identified sustainable construction practices. The CONTRACTOR shall participate in the pursuit of Certification by assuming responsibility for compliance with designated credits. CONTRACTOR shall develop a plan for compliance, monitor progress, maintain necessary records, and submit required documentation in support of compliance with sustainable construction practice.

ARTICLE 2 – THE CONTRACT DOCUMENTS

The Contract Documents consist of: Invitation to Bid, Instructions to Bidders, the Prevailing Rate of Per Diem Wages as determined by the Director of the California Department of Industrial Relations, the accepted Bid and Bid Schedule, List of Subcontractors, Non-Collusion Affidavit, Certification of Bidder's Experience and Qualifications, Bid Security or Bid Bond, Site Visit Affidavit, Superintendent Qualification Form, this Agreement, Worker's Compensation Certificate, Performance Bond, Payment Bond, Notice of Award, Notice to Proceed, Notice of Completion, General Conditions of the Contract, Supplementary General Conditions of the Contract, Technical Specifications, Drawings listed in the Drawing Index on the Cover Sheet of the Drawing set, Addenda, and all Change Orders, and Work Change Directives which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto.

ARTICLE 3 - CONTRACT PRICE

The DISTRICT shall pay the CONTRACTOR for the completion of the Work in accordance with the Contract Documents in current funds equal to the Contract Price in the amount of _____ (\$.) Dollars.

ARTICLE 4 - PAYMENT PROCEDURES

The CONTRACTOR shall submit Applications for Payment in accordance with the General Conditions of the Contract. Payment to the Contractor shall be processed by the DISTRICT as provided in the General Conditions.

ARTICLE 5 - CONTRACT TIME

Time is of the essence for the Work, under this Contract, to be completed. It is critical to DISTRICT operations that the Work commence on the date specified in the Notice to Proceed and continue, unimpeded, until complete. The Contract Time is hereby defined as two hundred and seventy (270) consecutive calendar days after commencement date stipulated in the Notice to Proceed plus any extensions thereof allowed in accordance with Article 12 of the General Conditions.

The CONTRACTOR shall be assessed Liquidated Damages if the Work is not completed within the time frame stipulated (above).

ARTICLE 6 – LIQUIDATED DAMAGES

The DISTRICT and CONTRACTOR recognize that time is of the essence of this Agreement and that the DISTRICT will suffer financial loss if the Work is not completed within the time specified in Article 5, plus any extensions thereof allowed in accordance with the terms of the Contract Documents. The parties also recognize that the amount of the DISTRICT's actual damages in the event of such delays are impractical and infeasible to determine at this time. Accordingly, the DISTRICT and the CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), the CONTRACTOR shall pay the DISTRICT the sum of One Thousand, Five Hundred (\$1,500.) Dollars for each calendar day that expires after the time specified in Article 5, plus any extensions, until actual completion of the Work. The payment of liquidated damages pursuant to this Article is for the limited purpose of compensating the DISTRICT for the costs and expenses associated with the delay in receiving the benefits and use of the Work and not for other damages that may be incurred by the DISTRICT. The CONTRACTOR's responsibility for or payment of liquidated damages shall not in any way preclude the District from pursuing any of its other remedies under the Contract Documents or Laws for the CONTRACTOR's failure to complete the Work in a timely manner or otherwise satisfy its obligations as required by the Contract Documents.

ARTICLE 7 - NOTICES

Where provisions of the Contract Documents require written notification, it shall be deemed to have been validly given if delivered in person to **Brian McCarthy, General Manager/Superintendent**, Goleta West Sanitary District, the Architect, or if sent by registered or certified mail, to Goleta West Sanitary District.

ARTICLE 8 - MISCELLANEOUS

Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in said General Conditions. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

SIGNATURES ON NEXT PAGE

The DISTRICT and the CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the DISTRICT and the CONTRACTOR have caused this Agreement to be executed the day and year first above written.

GOLETA WEST SANITARY DISTRICT
SANTA BARBARA COUNTY, CALIFORNIA
By: Brian McCarthy, General Manager/ Superintendent

Signature
Title: General Manager/ Superintendent

Attest:

Signature

Address for giving Notice:
GOLETA WEST SANITARY DISTRICT
P.O Box 4 Goleta, CA 93116

Attention: Brian McCarthy, General Manager/Superintendent

CONTRACTOR:

By:

Signature
Title:

Attest:

Signature

Address for giving Notice:

License No.

Agent for service of process:

END OF AGREEMENT

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

WORKER'S COMPENSATION CERTIFICATE
(AS REQUIRED BY SECTION 1861 OF THE CALIFORNIA LABOR CODE)

We are aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and will comply with such provisions before commencing the performance of the work of this contract.

Contractor: _____

By: _____

Title: _____

END OF WORKER'S COMPENSATION CERTIFICATE

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

PERFORMANCE BOND

ALL PERSONS TAKE NOTICE

That _____ as Contractor, and
_____ as Surety,

Are held firmly bound unto the GOLETA WEST SANITARY DISTRICT, organized under the laws of the State of California and existing in the County of Santa Barbara, California, hereinafter called the "District," in the sum of: _____ (\$.) Dollars.

For the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS said Contractor has been awarded and is about to enter into the annexed Agreement with said District to perform the Work as specified or indicated in the Contract Documents entitled:

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04, NEW ADMINISTRATION BUILDING**

NOW THEREFORE, the condition of this obligation is such that if the Contractor, his/her or its heirs, executors, administrators, successors, or assigns, shall abide by, keep, and perform all the covenants, conditions, requirements, obligations, and provisions of the Agreement, any alterations made to the Agreement, or any regulations pertaining to the Agreement, to be performed on its or their part, at the times and in the manner specified therein, and shall indemnify, defend and hold harmless the District, its officers, agents, and employees as provided in the Agreement, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

The Surety stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Agreement or the Work shall in any way release Surety or affect its obligations on this bond and Surety further waives notice of any such change, extension of time, alteration, or addition to the Agreement as required by California Civil Code Section 2819 and 2845, or otherwise.

As part of the obligations secured by this bond, in addition to the above face amount, there shall be included all costs and expenses incurred by the District, including actual attorneys' fees and costs, in successively enforcing such obligations, all to be taxed as costs and included in any judgment.

Whenever the Contractor shall be and declared by the District in default under the Agreement, Surety, upon written notification from the District, shall promptly remedy the default or promptly pay the amount of this bond to the District.

As a condition precedent to the satisfactory completion of the Agreement, the above obligation in the said amount shall hold good for a period of one (1) year after the completion and acceptance of the Work, during which time if the above bound Contractor, his/her or its heirs, executors, administrators, successors, or assigns shall fail to make full, complete, and satisfactory repair and replacements or totally protect the District from loss of damage made evident during said period of one (1) year from the date of acceptance of the work under the Agreement, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligation in said amount shall remain in full force and effect. However, anything in this paragraph to the contrary notwithstanding, the obligation of the Surety hereunder shall continue so long as any obligation of the Principal remains.

Nothing herein shall limit the District's rights or the Contractor's or Surety's obligations under the Agreement, law or equity, including, but not limited to, California Code of Civil Procedure §337.15.

Whenever the Contractor shall be, and is declared by the District to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly at the District's option: (1) take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or (2) obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the District, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable; or (3) permit the District to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to the Contractor by the District under the Agreement and any modification thereto, less any amount previously paid by the District to the Contractor and any other set offs pursuant to the Contract Documents

SIGNED AND SEALED, this _____ day of _____, 2023.

Contractor

Surety

By _____

Address

Title _____

Phone Number _____

By _____

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)

Title _____

END OF PERFORMANCE BOND

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

PAYMENT (LABOR & MATERIALS) BOND

KNOW ALL MEN BY THESE PRESENTS,

That _____ as Contractor

and _____ as Surety,

Are held firmly bound unto the Goleta West Sanitary District, organized under the laws of the State of California and existing in the County of Santa Barbara, California, hereinafter called the "District," in the sum of: _____ Dollars (\$.),

For the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Contractor has been awarded and is about to enter into the annexed agreement with said District to perform the Work as specified or indicated in the Contract Documents entitled:

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04, NEW ADMINISTRATION BUILDING**

NOW THEREFORE, if said Contractor, its Subcontractors, its heirs, executors, administrators, successors, or assigns shall fail to pay for any materials, provisions, provender, equipment or other supplies used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and its Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such labor, all as required by the provisions of Sections 9550-9566, inclusive, of the Civil Code of the State of California and acts amendatory thereof, and sections of other codes of the State of California referred to therein and acts amendatory thereof, and provided that the persons, companies, or corporations so furnishing said materials, provisions, equipment or other supplies, appliances or power used in, upon, for or about performance of the work contracted to be executed or performed, or any person, company or corporation renting or hiring implements or machinery or power for or contributing to said work to be done, or any person who performs work or labor upon the same, or any person who supplies both work and materials therefore, shall have complied with the provisions of said laws, then said surety will pay the same in an amount not exceeding the sum herein before set forth and also will pay, in case suit is brought upon this bond, a reasonable attorney's fee, as shall be fixed by the Court. This bond shall inure to the benefit of any and all persons named in Sections 8520 and 8530 of the Civil Code of the State of California so as to give a right of action to them or their assigns in any suit brought upon this bond.

PROVIDED, that any alterations in the Work to be done or the materials to be furnished, or changes in the time of completion, which may be made pursuant to the terms of said Contract Documents, shall not in any way release said Contractor or said Surety there under, nor shall any extensions of time granted under the provisions of said Contract Documents release either said Contractor or said surety, and notice of said alterations or extensions of the Agreement is hereby waived by said Surety.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any fraud practiced by any third party nor by any breach or alleged breach by the District, and the sole condition of the Surety's obligation is that a person listed in Civil Code §8400 or 8402 has not received full payment on its claim.

As a part of the obligation secured hereby and in addition to the amount specified therefor, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the District in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

SIGNED AND SEALED, this _____ day of _____ 2023.

Contractor
By _____
Title _____

Surety
Address _____
Phone Number _____
By _____
Title _____

(SEAL AND NOTARIAL ACKNOWLEDGMENT OF SURETY)

END OF PAYMENT BOND

Certificate of Liability Insurance

DATE (MM/DD/YY)

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
	COMPANIES AFFORDING COVERAGE
INSURED	COMPANY A
	COMPANY B
	COMPANY C
	COMPANY D

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE	POLICY EXPIRATION DATE	LIMITS	
A	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTOR'S PROTECTION <input type="checkbox"/> X, C, U <input type="checkbox"/> BROAD FORM PROPERTY DAMAGE				GENERAL AGGREGATE PRODUCTS - COMP/OP AGG PERSONAL & ADV INJURY EACH OCCURRENCE FIRE DAMAGE (ANY ONE FIRE) MED EXP (ANY ONE PERSON)	\$ \$ \$ \$ \$ \$
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> _____				COMBINED SINGLE LIMIT BODILY INJURY (PER PERSON) PROPERTY DAMAGE	\$ \$ \$
	GARAGE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> _____				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EACH ACCIDENT AGGREGATE	\$ \$ \$
B	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE AGGREGATE	\$ \$
C	WORKER'S COMPENSATION AND LIABILITY EMPLOYER'S LIABILITY THE PROPRIETOR PARTNERSHIP/EXECUTIVE <input type="checkbox"/> INCL OFFICERS ARE: <input type="checkbox"/> INCL				<input type="checkbox"/> WC STATUTORY <input type="checkbox"/> OTHER <input type="checkbox"/> LIMITS EL EACH ACCIDENT EL DISEASE - POLIVY LIMIT EL DISEASE - EA EMPLOYEE	\$ \$ \$
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER	CANCELLATION
GOLETA WEST SANITARY DISTRICT P. O BOX 4 GOLETA, CA 93116	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BY CERTIFIED MAIL.
	AUTHORIZED REPRESENTATIVE

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NOTICE OF AWARD

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04, NEW ADMINISTRATION**

Dated

To: _____
(Bidder)

Address: _____

You are hereby notified that your Bid dated _____ 2023, for the above Contract, has been considered. You are the successful bidder and have been awarded the contract for the above named project.

The Bid Price of your contract is _____ Dollars. (\$.)

Two copies of each of the Contract Documents accompany this Notice of Award. You must comply with the following conditions precedent within Ten (10) business days of the date of this Notice of Award; that is, by: _____, 2023.

You must deliver to the District two (2) fully executed counterparts of the Agreement, including all the Contract Documents. Each of the Contract Documents must bear your signature on the cover page.

You must deliver with the executed Agreement, the Payment and Performance Bonds and the Certificates of Insurance as specified in the Instructions to Bidders, and the General Conditions.

Failure to comply with these conditions within the time specified will entitle the District to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten (10) days after you comply with the foregoing conditions, the District will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

GOLETA WEST SANITARY DISTRICT

By _____

Title _____

Copy to General Manager and Project Architect

END OF NOTICE OF AWARD

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NOTICE TO PROCEED

Dated _____

To: _____

(Contractor)

Address:

You are hereby notified to Proceed with the Work, as defined in the Contract Documents for:

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

The Contract Time to perform the Work will commence on _____ 2023.

Time is of the essence, to complete the Work. Once the Work has commenced, it shall continue, unimpeded, until completed. The timeframe to complete the Work shall not exceed Two Hundred and Seventy (270) consecutive calendar days after the date of commencement. If the work is not completed within that timeframe, Liquidated Damages will be assessed.

Article 2.06 of the General Conditions stipulates that a review of the Project Site and Contract Documents occur, to verify figures and field dimensions. Any observed conflicts or discrepancies shall be immediately reported to the Architect.

Per the General Conditions of the Contract, prior to commencement of work, the Contractor shall submit:

1. Preliminary Project Schedule, which shall include commencement and completion dates of key construction stages, critical milestone dates and date of substantial completion.
2. Preliminary Shop Drawing and Submittal schedule, which shall indicate the projected submittal dates of the various project components along with a listing of anticipated alternatives and their projected submittal dates.
3. Contractor's list of required permits and licenses, which shall indicate the Agency Having Jurisdiction that will issue the specific permit, or necessary approval, along with the scheduled date of submittal for the permit and anticipated date of receipt of the permit or approval.

GOLETA WEST SANITARY DISTRICT

By _____

Title _____

(Use Certified Mail, Return Receipt Requested)

END OF NOTICE TO PROCEED

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CHANGE ORDER NO. ____

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

Contract Date:

CONTRACTOR _____

The following changes are hereby made to the Contract Documents:

Attachments: (list drawings, sketches, specs, and other documents describing changes)

CHANGE TO CONTRACT PRICE

Original Contract Price: \$

Current contract price, as adjusted by previous Change Orders: \$

The Contract Price due to this Change Order will be [increased]

[decreased] by \$ The new Contract Price due to this Change Order will

be: \$

CHANGE TO CONTRACT TIME

The Contract Time will be [increased] [decreased] by _____ calendar days.

The date for completion of all work under the contract will be _____.

APPROVALS REQUIRED

To be effective, this Change Order must be approved by the Goleta West Sanitary District.

Recommended by: _____ Date: _____
Architect

Approved/Ordered by: _____ Date: _____
Goleta West Sanitary District

Accepted by: _____ Date: _____
Contractor Name & Title

END OF CHANGE ORDER FORM

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WORK CHANGE PROPOSAL

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

CONTRACTOR _____

You are requested to provide the GOLETA WEST SANITARY DISTRICT with a proposal to perform the following change(s) to the work:

Please identify total cost to complete Work Change Proposal, the method of determining change in Contract Price, and the additional calendar days required to complete Work Change.

Attachments: (list drawings, sketches, specs, and other documents describing changes)

GOLETA WEST SANITARY DISTRICT

By: _____

Title: _____

Date: _____

END OF WORK CHANGE PROPOSAL

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**CONSENT OF SURETY
For Final Payment**

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

Type of Contract _____

Amount of Contract: \$ _____

In accordance with the provisions of the above-named contract between the GOLETA WEST SANITARY DISTRICT and the Contractor, the following named surety:

On the Payment Bond of the following-named Contractor:

Hereby approves of final payment to the Contractor, and further agrees that said final payment to the Contractor shall not relieve the Surety Company named herein of any of its obligations to the GOLETA WEST SANITARY DISTRICT, Santa Barbara County, California, as set forth in said Surety Company's bond.

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand and seal this _____ day

of _____ 2023

(Name of Surety Company)

(Signature of Authorized Representative)

(Corporate Seal)

TITLE _____

END OF CONSENT OF SURETY

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RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Brian McCarthy
Goleta West Sanitary District
UCSB Campus Parking Lot 32
Santa Barbara, CA 93106

THIS SPACE RESERVED FOR RECORDER ONLY
(Gov. Code § 27361.6)

NOTICE OF COMPLETION

APN:

NOTICE IS HEREBY GIVEN THAT:

1. **Agent of Owner:** The undersigned is the agent of the owner of the interest or estate below.
2. **Owner:** Santa Barbara Municipal Airport is the owner of the interest or estate in the property
3. **Project Address:** UCSB Campus Parking Lot 32, Santa Barbara, CA 93106.
4. **Nature of Interest:** The nature of Owner's interest or estate in the Property is an easement.
5. **Completion Date:** The Owner accepted the Project as complete on _____,
Which is the completion date pursuant to California Civil Code.
6. **Project Description:** **Goleta West Sanitary District, Headquarters, Building Upgrades
New Administration Building**

The work encompasses demolition of 1,170 SF of existing structures, along with associated foundations, and utilities; in addition to Site preparation for construction of a 3,298 SF single-level, on-grade, structure to house Administrative Offices, Public Lobby and Service Counter, Board Room, and support spaces. Access to Lobby and separate exterior access to Board Room is provided under a shaded colonnade, forming the north boundary of a 1,520 SF landscaped Courtyard.

Site is located within a FEMA designated Special Flood Hazard Area. Site is protected from flooding by a FEMA compliant Perimeter Flood Wall. Perimeter Flood Wall is comprised of permanent concrete masonry and cast-in-place concrete walls and demountable flood barriers. Courtyard perimeter wall forms one portion of the Flood Wall and a linear concrete pad/path is the base for demountable Flood Barriers, that protect the north face of the Site.

Perimeter Flood Wall components are to remain in place, and functional, throughout the course of construction. Construction shall occur immediately adjacent to the cast-in-place concrete walls and flatwork, which must be protected from damage.

Additional work includes Landscaping west of the Administration Building, at the north end of the entire Site, and at a linear, raised, planter along the west face of the existing Administration Building. Paving of the work yard, parking immediately east of the new Administration Building, and installation of two (2) Electric Vehicle Charging Stations, east of existing Pump Station #1 is also included within the Scope of Work.

The Project will be seeking Leadership in Energy and Environmental Design (LEED) Certification to demonstrate the District's commitment to sustainability. Certification, under the auspices of the Green Building Certification Inc. (GBCI), requires submittal of documentation as evidence of compliance with stipulated criteria to achieve Certification. This includes credit for identified sustainable construction practices. The CONTRACTOR shall participate in the pursuit of Certification by assuming responsibility for compliance with designated credits. CONTRACTOR shall develop a plan for compliance, monitor progress, maintain necessary records, and submit required documentation in support of compliance with sustainable construction practice.

7. **Original Contractor:** The name of the original contractor for the Project is _____.

8. **Project Location:** The Property and Project are located in the County of Santa Barbara, CA, and are commonly known as Goleta West Sanitary District. The Property is designated as Assessor's Parcel Number 073-450-003 by the Santa Barbara County Assessor.

The work performed under this contract has been inspected by authorized representatives of the District, Contractor, and Architect, and the Project (or specified part of the Project, as indicated above) is hereby accepted by the District and declared to be substantially completed on the above date of completion.

Completion of the Work shall be the date of such acceptance of the Work by the District, as provided under California Civil Code Section 8180 Completion shall mean substantial performance of the contract as such is defined in Black's Law Dictionary, Revised Fourth Edition, West Publishing Company.

A list of all items remaining to be completed or corrected is appended hereto. All such work shall be completed or corrected to the satisfaction of the District within Ten (10) calendar days after the above Date of Completion; otherwise the Contractor does hereby waive any and all claims to all monies withheld by the District under the Contract to cover the value of such uncompleted or uncorrected items.

Dated _____, 2023

Goleta West Sanitary District

By: _____
Brian McCarthy, General Manager/Superintendent

VERIFICATION

The undersigned, states: I, Brian McCarthy, am the General Manager/Superintendent of the Goleta West Sanitary District, the Owner of the Interest or Estate described in the above notice. I have read the above notice and know and understand its contents and the facts stated in it are true and correct. I declare under penalty of perjury that the above is true and correct.

Executed on _____, 2023 at Santa Barbara, California.

Brian McCarthy

END OF NOTICE OF COMPLETION

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**CONDITIONAL WAIVER AND
RELEASE UPON PROGRESS PAYMENT**

[California Civil Code §8132]

The undersigned has been paid and has received a progress payment in the sum of: \$_____ for labor, services, equipment, and material furnished to:

**GOLETA WEST SANITARY DISTRICT, Santa Barbara County, California
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant:

Name of Customer:

Job Location:

Owner:

Through Date:

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check:

Amount of Check: \$

Check payable to:

Exceptions

This document does not affect any of the following:

- (1) Retentions
- (2) Extras for which the claimant has not received payment
- (3) The following progress payments for which the claimant has previously given a conditional waiver and release, but has not received payment.
Date(s) of waiver and release
Amount(s) of unpaid progress payment(s): \$
- (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract and (B) the right to recover compensation for work not compensated by the payment.

Dated _____

(Company Name)

By _____

Title

END OF CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

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**CONDITIONAL WAIVER AND RELEASE
UPON FINAL PAYMENT**

[California Civil Code §8136]

The undersigned has been paid in full for all labor, services, equipment, and material furnished to:

**GOLETA WEST SANITARY DISTRICT, Santa Barbara County, California
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04 NEW ADMINISTRATION BUILDING**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant:

Name of Customer:

Job Location:

Owner:

Conditional Waiver and Release:

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check:

Amount of Check: \$

Check payable to:

Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of \$

Dated _____

(Company Name)

By _____

Title

END OF UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

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GOLETA WEST SANITARY DISTRICT

PROJECT MANUAL

HEADQUARTERS, BUILDING UPGRADES

PROJECT NO. 13-04

PART II – GENERAL CONDITIONS OF THE CONTRACT

NEW ADMINISTRATION BUILDING

2023



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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04**

NEW ADMINISTRATION BUILDING

PROJECT MANUAL

PART II - CONDITIONS OF THE CONTRACT

**General Conditions
Supplementary General Conditions**

GENERAL CONDITIONS

TABLE OF CONTENTS

ARTICLE 1 DEFINITIONS

ARTICLE 2 PRELIMINARY MATTERS

- 2.01 Legal Address of the District
- 2.02 Delivery of Bonds
- 2.03 Notice to Proceed
- 2.04 Commencement of Contract
- 2.05 Construction Contact Sign
- 2.06 Before Starting Construction
- 2.07 Pre-Construction Conference
- 2.08 Neighborhood Notification
- 2.09 Initially Acceptable Schedules

ARTICLE 3 CONTRACT DOCUMENTS

- 3.01 Contract Documents
- 3.02 Intent
- 3.03 References and Discrepancies
- 3.04 Amending and Supplementing Contract Documents
- 3.05 Order of Precedence
- 3.06 Reuse of Documents
- 3.07 Electronic Data

ARTICLE 4 WORK SITE

- 4.01 Availability of Site
- 4.02 Subsurface and Physical Conditions
- 4.03 Hazardous Materials
- 4.04 Construction Staging and Storage
- 4.05 Existing Facilities and Conditions
- 4.06 Differing Site Conditions

ARTICLE 5 BONDS AND INSURANCE

- 5.01 Performance, Payment, and Other Bonds
- 5.02 Certificates of Insurance
- 5.03 Policy Requirements
- 5.04 District Liability Insurance
- 5.05 Waiver of Rights
- 5.06 Receipt and Application of Insurance Proceeds
- 5.07 Acceptance of Bonds
- 5.08 Partial Utilization – Property Insurance

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

- 6.01 Supervision and Superintendence
- 6.02 Labor, Materials, and Equipment
- 6.03 Adjusting Progress Schedule
- 6.04 Subcontractors, Suppliers, and Others
- 6.05 Permits, License Fees, and Royalties
- 6.06 Laws and Regulations
- 6.07 Taxes
- 6.08 Use of Premises
- 6.09 Safety and Protection
- 6.10 Record Documents
- 6.11 Shop Drawings and Samples
- 6.12 Continuing the Work
- 6.13 Warranty and Guarantee
- 6.14 Indemnification
- 6.15 Assignment of Contract
- 6.16 Protection of the Work
- 6.17 Protections and Controls in Performing the Work
- 6.18 Temporary Facilities
- 6.19 Progress Meetings

ARTICLE 7 OTHER WORK

- 7.01 Related Work at Site

ARTICLE 8 DISTRICT'S RESPONSIBILITIES

- 8.01 Communications to Contractor
- 8.02 Furnish Data
- 8.03 Lands and Easements; Reports and Tests
- 8.04 Inspections, Tests, and Approvals
- 8.05 Suspension of Work
- 8.06 Limitations on District's Responsibilities
- 8.07 Hazardous Materials

ARTICLE 9 ARCHITECT'S RESPONSIBILITIES

- 9.01 District's Representative
- 9.02 Visits to Site
- 9.03 Clarifications and Interpretations
- 9.04 Authorized Variations in the Work
- 9.05 Rejecting Defective Work
- 9.06 Submittal Review
- 9.07 Decisions on Disputes
- 9.08 Limitations on the Architect's Authority and Responsibilities

ARTICLE 10	CHANGES IN THE WORK
10.01	General
ARTICLE 11	CHANGE TO CONTRACT PRICE
11.01	General
11.02	Cost of Work
11.03	Contractor's Extra Work
11.04	Records
ARTICLE 12	CHANGE TO CONTRACT TIME
12.01	General
12.02	Inclement Weather
ARTICLE 13	DEFECTIVE WORK
13.01	Compliance with Contract Documents
13.02	Notice of Defects
13.03	Access to the Work
13.04	Tests and Inspections
13.05	Uncovering Work
13.06	Stopping the Work
13.07	Correction or Removal of Defective Work
13.08	Correction Period
13.09	District May Correct Defective Work
ARTICLE 14	PAYMENTS TO THE CONTRACTOR AND COMPLETION
14.01	Schedule of Values
14.02	Application for Progress Payment
14.03	Contractor's Warranty of Title
14.04	Review of Applications for Progress Payments
14.05	Beneficial Use or Occupancy and Partial Utilization
14.06	Substantial Completion
14.07	Partial Utilization
14.08	Final Inspection
14.09	Final Application for Payment
14.10	Final Payment and Acceptance
14.11	Release of Retainage and Other Deductions
14.12	Contractor's Continuing Obligation
14.13	Waiver of Claims
ARTICLE 15	SUSPENSION OF WORK AND TERMINATION
15.01	Suspension of Work by the District
15.02	Termination of Agreement by the District (Contractor Default)
15.03	Termination of Agreement by the District (For Convenience)
15.04	Termination of Agreement by the Contractor
ARTICLE 16	DISPUTE RESOLUTION
16.01	Dispute Resolution

ARTICLE 17 MISCELLANEOUS

- 17.01 Giving Notice
- 17.02 Title to Materials Found on the Work
- 17.03 Computation of Time
- 17.04 Right to Audit
- 17.05 Notice of Claim
- 17.06 Cumulative Remedies
- 17.07 Professional Fees and Court Costs Included
- 17.08 Survival of Obligations

ARTICLE 18 CALIFORNIA STATE REQUIREMENTS

- 18.01 State Wage Determinations
- 18.02 Workers' Compensation
- 18.03 Apprentices on Public Works
- 18.04 Working Hours
- 18.05 Acts of God
- 18.06 Notice of Completion
- 18.07 Unpaid Claims
- 18.08 Retainage from Monthly Payments
- 18.09 Public Works Contracts; Assignment to Awarding Body
- 18.10 Submittal of Bids; Agreement to Assign
- 18.11 Payroll Records
- 18.12 Cultural Resources
- 18.13 Removal, Relocation, or Protection of Existing Utilities
- 18.14 Timely Progress Payments, Interest, and Payment Requests
- 18.15 Digging Trenches or Other Excavations
- 18.16 Retention Procedures, Withholding, and Disbursement
- 18.17 Claims Procedures
- 18.18 Dispute Resolution Procedures
- 18.19 Procedures for Civil Actions
- 18.20 Waiver of Jury Trial
- 18.21 Miscellaneous Certifications

**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

PART II - CONDITIONS OF THE CONTRACT

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents and printed with initial capital letters, the following terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda - Written or graphic instruments issued prior to the opening of Bids, which make changes, additions, or deletions to the Bid Documents.

Agreement - Written contract between the District and the Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment - Form to be used by the Contractor in requesting progress or final payments and accompanied by such supporting documentation as is required by the Contract Documents.

ARCHITECT - Architectural firm and their designated representatives acting on behalf of Goleta West Sanitary District as their authorized representative within the scope of authority defined in their contract.

ARCHITECT'S Consultant - Individual, firm or corporation having a contract with the Architect to furnish services as the Architect's independent professional associate or consultant with respect to the Project, including Engineer-of-Record responsibilities on this project.

Architect-of-Record- The licensed professional who, as a representative of the architectural firm, sealed and signed the architectural construction documents, for the project.

Asbestos - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Beneficial Use or Occupancy - Placing all or any portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching completion for all of the Work.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the price or prices for the Work to be performed.

Bidder – The individual or entity who submits a Bid directly to the District.

Bidding Documents - The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

Bidding Requirements – Invitation to Bid, Instructions to Bidders, Bid Form and accompanying Bid Schedule, List of Subcontractors, Non-Collusion Affidavit, Certification of Bidder's Experience and Qualifications, Bid Bond or Security, Site Visit Affidavit, Superintendent Qualification Form.

Bonds - Bid, Performance, and Payment bonds and other security instruments which protect the District against financial loss due to inability or refusal of the Contractor to perform its Contract.

Change Order - A document recommended by the Architect which is signed by the Contractor and the District and authorizes an addition to, deletion from, or revision to the Work, and/or an adjustment in the Contract Price and/or the Contract Time, issued on or after the Effective Date of the Agreement.

Claim – A demand or assertion by the District or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

Completion - Completion of the Work shall be the date of such acceptance of the Work by the District, as provided under California Civil Code Section 8180.

Consultant – Architectural, Engineering, and Specialty Firms and their designated representatives acting on behalf of Goleta West Sanitary District as their authorized representative within the scope of authority defined in their contract with the District.

Contract Documents - Unless otherwise defined in the Agreement or Supplementary General Conditions, the Contract Documents shall comprise the Notice Inviting Bids, Instructions to Bidders, the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations, the accepted Bid and Bid Schedule, List of Subcontractors, Non-collusion Affidavit, Certification of Bidder's Experience and Qualifications, Bid Bond or Bid Security, Site Visit Affidavit, Superintendent Qualification Form, the Agreement, Worker's Compensation Certificate, Performance Bond, Payment Bond, Notice of Award, Notice to Proceed, Notice of Completion, General Conditions of the Contract, Supplementary General Conditions, Technical Specifications, Drawings, and all Addenda, Change Orders, and Work Change Directives executed pursuant to the provisions of the Contract Documents, together with all Field Orders and Architects written interpretations and clarifications issued pursuant to [Article 3.04](#) on or after the Effective Date of the Agreement. Shop Drawing submittals reviewed pursuant to [Article 6.12](#) and the reports and drawings referred to in [Article 4.02a](#), are not Contract Documents.

Contract Price - The moneys payable by District to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement.

Contract Time - The number of consecutive calendar days as stated in the Contract Documents for the completion of the Work to achieve Substantial Completion.

CONTRACTOR - Person, firm, or corporation with whom the District has entered into an Agreement for Construction.

CONTRACTOR'S Project Representative - Contractor's representative for the project through whom all matters addressed to the Contractor regarding the project shall be directed.

Cost of Work - The term Cost of Work, pursuant to [Article 11.02](#) shall mean the sum of all costs necessarily incurred and paid for by the Contractor for labor, materials, and equipment in the proper performance of the Work, plus the Contractor's fee for overhead and profit pursuant to [Article 11.03](#), herein.

County - The term County shall mean the County of Santa Barbara.

Day - A calendar day of 24 hours, measured from midnight to the next midnight

Deconstruction – The terms Demolish, Demolition, Deconstruct, and Deconstruction, as used in the Contract Documents, may be used interchangeably. The intent is for the required removal, or “demolition”, of structures to be accomplished with safety, care, and consideration of adjacent equipment, systems, or structures that are to remain in place, serviceable and operational. The Project Site is, and will remain, a working, operational facility. Removal, tearing or knocking down of structures to accommodate new construction could have detrimental impact to ongoing operations, if a critical utility line or infrastructure is impeded, interrupted, or severed.

Defective Work – A description refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents, or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to the Architect's recommendation of final payment (unless responsibility for the protection thereof has been assumed by DISTRICT at the time of Substantial Completion in accordance with [Article 14.07](#)).

DISTRICT - The Goleta West Sanitary District, organized under the laws of the State of California and existing in the County of Santa Barbara, State of California, may be alternatively referred to as the DISTRICT or the OWNER. The DISTRICT'S, Board authorized, representative shall be the DISTRICT'S General Manager/ Superintendent.

Drawings - The graphic representation of the extent, configuration, location, quantity, dimension and relationship of the intended Scope of the Work to be completed as a part of the Contract. The Drawings are one component of the Contract Documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it shall mean the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

End of Contract - The End of the Contract shall be identified as being that day when the Work should be completed based upon the predefined contract period as indicated in the Contract Documents plus any adjustments to the Contract Time authorized by the District.

Engineer - The word Engineer shall mean the licensed professional, or a designated representative, providing consulting Engineering services to the Architect with respect to the Project.

Engineer-of-Record - The licensed professional who, as a representative of an Engineering firm providing consulting services to the Architect, within their respective discipline, sealed and signed the engineering construction documents, for the project.

Field Order - A written order issued by the Architect which authorizes minor changes in the Work in accordance with [Article 9.04](#) but which does not involve a change in the Contract Price or the Contract Times.

Final Payment - Final payment shall be the last progress payment, less any specified retainage, authorized after completion and acceptance of the Work by the District in accordance with the provisions of California Civil Code Section 8180. Release of retainage cannot be made until thirty to forty-five (30 to 45) days after acceptance of the Work and recording of a Notice of Completion by the District, or thirty to forty-five (30 to 45) days following the cessation of labor for a continuous period of thirty (30) days, whichever occurs first.

Furnish – The word “furnish”, when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site, or other specified location, ready for use, and in usable or operable condition.

General Requirements - Sections of Division 1 of the Technical Specifications. The General Requirements pertain to all sections of the Technical Specifications.

Infrastructure – see *'Underground Facilities'*

Install - The word “install,” used in connection with services, materials, or equipment, shall mean to place said services, materials, or equipment into final position; complete, connected, and ready for intended use.

LEED - (Leadership in Energy and Environmental Design) A rating system developed by the U.S. Green Building Council (USGBC) to evaluate the 'energy' performance and 'sustainability' of a 'green' building.

Liens -- Mechanic's lien, stop notice, or bond right or any right against labor, services, equipment, or material furnished in connection with any project in which the claimant has bond or lien rights as defined in California Civil Code Section 8400-8402.

Milestone – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

Notice of Award - The written notice by the District to the apparent successful bidder stating that upon compliance with the conditions precedent enumerated therein, within the time specified, the DISTRICT will enter into an Agreement. A Notice of Award will only be issued after approval by the DISTRICT'S General Manager and/or Board of Directors.

Notice of Completion - The legal document filed by the District with the Santa Barbara County Clerk after the project has been accepted by the Goleta West Sanitary District, Board of Directors. This document begins the notification period when those firms or individuals who have submitted a preliminary notice for the project will be on notice that the project has been accepted as complete by the District.

Notice to Proceed - A written notice issued by the District to the Contractor (with a copy to the Architect) establishing the date on which the Contract Time will commence, authorizing the Contractor to proceed performing the Contractor's obligations under the Contract Documents.

OWNER - The Goleta West Sanitary District, or any subdivision thereof, herein referred to as the District, with whom the Contractor has entered into the Agreement and for whom the Work is to be provided.

OWNER's Consultant - A person, firm or corporation having a contract with Goleta West Sanitary District to furnish services as the Owner's independent professional associate or consultant with respect to the Project.

Partial Utilization - Use by the District of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work. A written notice of partial utilization will be issued to the Contractor when such occurs.

Progress Schedule - Schedule prepared and maintained by the Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Time.

Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Project Manual – Encompasses Bid and Agreement Forms, and Bonds; Conditions of the Contract, General Conditions and Supplementary Conditions; and Technical Specifications.

Project Representative - The individual identified as the only authorized representative of the District, the Architect, or the Architect's Consultants through whom all project related communication shall be issued and received.

Provide / Perform - The words "provide" or "perform", when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use. When the words "furnish", "install", "perform", or "provide" are not used in connection with services, materials, or equipment in a context clearly requiring an obligation of the Contractor, "provide" is implied.

Resident Superintendent – Individual identified as the Contractor's full-time representative responsible for supervising all aspects of the Contractor's on-site responsibilities.

Samples - Physical examples of materials or products that are representative of some portion of the Work and establishes the quality, finish, or standards by which such portion of the Work will be judged.

Safety Representative – The individual designated by the Contractor whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and program.

Schedule of Values - Cost value of individual Work activities, materials, systems, or services that comprise the completed work. Breakdown of project costs into unit values provides basis for evaluation of Work effort and progress payment requests. Unit values provided shall not be used for pricing of change orders.

Shall – The word “shall,” as used in the Contract Documents, whether lower-case or capitalized, is intended to express that an action is mandatory or that a responsibility is obligatory.

Shop Drawings - Drawings, diagrams, illustrations, brochures, standard schedules, performance charts, and other graphic information prepared by a supplier or manufacturer to illustrate installation of some portion of the Work, submitted to the ARCHITECT for review.

Site – Land or area indicated in the Contract Documents upon which the Work is to be performed, including rights- of-way and easements for access thereto.

Specifications - The written definition and description of the quality, performance, standards, application and workmanship of the materials, systems, equipment, or services that are to be installed within the Scope of the Work of the Contract. Specifications are one component of the Contract Documents.

State – In these documents, the term shall mean, the State of California.

Subcontractor - An individual, firm, or corporation having a direct contract with the Contractor or with any other Sub-contractor for the performance of a part of the Work at the Site.

Substantial Completion – The stage in the construction of a project when the Work, or a specified portion thereof, has progressed to a point where it can be utilized for its intended use. The terms "Substantial Completion and "substantially complete" and "substantially completed" as applied to any Work shall mean Substantial Performance of the Contract, hereunder, as defined in Black's Law Dictionary, Revised Fourth Edition, West Publishing Company.

Supplementary General Conditions - The part of the Contract Documents which amends, supplements, or makes additions, deletions, or revisions to these General Conditions.

Supplier - A manufacturer, fabricator, retailer, distributor, or vendor having a direct contract with the Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work.

Technical Specifications - Written definition of the quality, performance, standards, application and workmanship of the materials, systems, equipment, or services that are to be installed within the Scope of the Work of the Contract. The Technical Specifications are one component of the Contract Documents.

Underground Facilities - Pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such elements and encasements installed underground to provide services or materials: electricity, water, sewage and drainage, gases, steam, petroleum products, telephone or communications systems.

Unit Price - Cost for a designated quantity of material, systems or installations quoted by the Bidder, to perform the Scope of Work defined.

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. The Work includes and is the result of performing services, or furnishing labor, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

Work Change Directive - A written directive to the Contractor, issued on or after the Effective Date of the Agreement, signed by the District and recommended by the Architect, ordering immediate commencement of work on an addition, deletion, or revision to the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or to emergencies as provided in the Contract Documents. A Work Change Directive may not be used to change the Contract Price or the Contract Time. A Work Change Directive may lead to a subsequent Change Order, as required.

Written Amendment – A written statement modifying the Contract Documents, signed by the District and Contractor on or after the Effective Date of the Agreement and normally dealing with non-engineering or non- technical rather than strictly construction related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Legal Address of the District

Goleta West Sanitary District
P.O Box 4
Goleta, CA 93116-0004

2.02 Delivery of Bonds

The CONTRACTOR shall deliver to the DISTRICT, Bonds, Certificates of Insurance, and other specified documents, along with, and at the same time, as the executed Agreement.

2.03 Notice to Proceed

Notice to Proceed may be given at any time within thirty (30) days after the Effective Date of the Agreement. In no event will the Contract Time commence to run later than the sixtieth (60th) day after the day of Bid opening or the thirtieth (30th) day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Commencement of Contract

- A. The Contract Time shall commence on the day stipulated in the Notice to Proceed, or on the thirtieth (30th) day after the Effective Date of the Agreement.
- B. CONTRACTOR'S performance of the Work shall commence coincidentally with the stipulated start of the Contract Time. No Work shall commence, on site, prior to that date.

2.05 Construction Contact Sign

- A. Immediately upon obtaining the Building Permit; the Contractor shall post signage at the points of entry to the Project Site listing the Contractor's name, telephone number(s), construction work hours, site rules, and construction- related conditions, to assist Building Inspectors and Police Officers in the enforcement of the conditions of approval.
- B. Sign shall comply with the City of Santa Barbara, Municipal Code, Sign Ordinance 22.70.030. Sign shall not exceed six feet in height from the ground if it is free-standing or placed on a fence. Sign shall not exceed twenty-four (24) square feet.

2.06 Before the Start of Construction

- A. The DISTRICT shall provide the CONTRACTOR with two (2) hard copies of the Contract Documents. Document files will be maintained at local printing firm, and available for reproduction of additional copies.
- B. Before undertaking the Work, the CONTRACTOR shall review the Contract Documents and the Project Site. The CONTRACTOR shall promptly report in writing to the ARCHITECT any conflict, ambiguity, discrepancy, or issue with any existing conditions. The CONTRACTOR shall obtain a written interpretation or clarification, from the ARCHITECT, relative to issues regarding existing conditions, prior to proceeding with any Work. Should the CONTRACTOR proceed with the work, prior to receipt of a response from the Architect, it will be assumed that the CONTRACTOR has accepted the existing conditions and will assume the cost of any rework required, should the finished installation not meet the intent of the Construction Documents.

- C. Within ten (10) days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to the ARCHITECT for review:
1. Preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any specified milestones.
 2. Preliminary Schedule of Shop Drawing and Sample Submittals which will list each required submittal and the timeframe for submitting, reviewing and processing such submittal.
 3. Preliminary Schedule of Values for the Work including quantities and prices of items aggregating the Contract Price and subdividing the Work into component parts in sufficient detail to serve as the basis for evaluation of progress payment requests. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.
 4. Prior to any presence on Site, CONTRACTOR shall deliver to the DISTRICT, certificates of insurance (and other evidence of insurance which the DISTRICT or any additional insured may reasonably request) which the CONTRACTOR is required to purchase and maintain.
 5. A plan for maintaining the health and safety including, but not limited to, COVID-19 safety measures, of the CONTRACTOR's employees, Subcontractors, suppliers, DISTRICT employees and consultants and others that may visit the Project Site. Such plan must include an assurance of compliance with any then-applicable federal, state, or local mandate related to COVID-19, and with any guidance set forth by the Center for Disease Control for preventing the spread of COVID-19.

2.07 Pre-Construction Conference:

- A. Upon commencement of Contract Time; Contractor shall schedule a Pre-Construction Conference, not less than ten (10) days or more than twenty (20) days prior to commencement of any construction effort on Site.
- B. The Pre-Construction Conference attendees shall include the General Manager of the Goleta West Sanitary District, the Architect and the Contractor. If deemed beneficial and agreed upon; one, or more, of the following may be asked to attend: the Project Engineers, Sub-Contractors, Representatives of the City of Santa Barbara, Public Works Department - Engineering and Transportation Divisions, and the Community Development Department - Building and Safety Division, and Product and/or Manufacturer Representatives.
- C. The Conference will serve to review site conditions, the construction schedule and construction conditions, in addition to Project roles and responsibilities, communication protocols, documentation procedures and site coordination requirements.
- D. The Contractor shall coordinate with the DISTRICT to arrange for the meeting to be held on SITE.
- E. The Contractor will comply with the District's safety rules and regulations while attending the Pre-Construction Conference including, but not limited to, COVID-19 safety measures. If requested by the District, all attendees of the Pre-Construction Conference will be required to review and execute a COVID-19 Waiver and Release of Liability form which will be provided by the District.

2.08 Neighborhood Notification

- A. Minimum of twenty (20) days prior to commencement of construction, Contractor shall provide written notification, of the impending Construction Project, to all property owners, businesses, and residents within 300 feet of the Goleta West Sanitary District Project Site.

- B. Notification shall contain: Project Description, Construction Schedule, Work Days and Hours, Contact (Contractor) Name and Phone number of the Contractor(s), Site Rules and Conditions of Approval (*pertaining to construction activities*), and additional information to assist Building Officials, Police Officers, and public in address issues that may arise during construction.

2.09 Initially Acceptable Schedules

- A. CONTRACTOR's proposed Project Schedule will be reviewed at the Pre-construction Conference, if the CONTRACTOR has previously submitted the Schedule, with sufficient time allowed for review by the DISTRICT and the ARCHITECT.
- B. Proposed Project Schedule shall be reviewed at least ten (10) days prior to submission of the first Application for Payment. CONTRACTOR shall have an additional ten (10) days to make corrections, adjustments, and complete and resubmit the Schedule. No progress payment shall be made to the CONTRACTOR until the Schedules are submitted to and deemed acceptable by the DISTRICT and ARCHITECT, as provided below.
- C. Construction Schedule shall provide an orderly progression of the Work to completion, within the Contract Time stipulated. Acceptance of the Schedule shall neither impose the responsibility for sequencing, scheduling, or progress of the Work on the DISTRICT, or ARCHITECT nor interfere with or relieve the CONTRACTOR from full responsibility thereof.
- D. CONTRACTOR's Shop Drawing and Sample Submission Schedule shall provide sufficient time for review and processing of submittals.
- E. CONTRACTOR's Schedule of Values shall provide reasonable allocation of the Contract Price to Work components. Schedule format of the schedule shall be reviewed, and approved, by the DISTRICT and ARCHITECT, prior to submittal of first Application for Payment.

ARTICLE 3 - CONTRACT DOCUMENTS

3.01 Contract Documents

- A. CONTRACT DOCUMENTS comprise the entire Agreement, for the Work, between the DISTRICT and CONTRACTOR, and consist of: Project Manual (Contract, Conditions, Amendments, & Specifications), and Construction Drawings (Plans). In accordance with State of California, Law; the Plans and Specifications (Contract Documents) are complementary. What is shown or called for in one is as binding as if shown and called for in all.
- B. Clarifications and Addenda issued in the Bid process, and Clarifications, Interpretations, Field and Change Orders issued during Construction shall become part of the Contract Documents.

3.02 Intent

- A. DISTRICT's Intent is to build a NEW ADMINISTRATION BUILDING, as described in Article 1 of the Agreement, as part of their Headquarters, Building Upgrades, Project No. 13-04.
- B. Scope of Work consists of furnishing all labor, materials, equipment, incidentals and services, including utilities, transportation and temporary facilities required and installation of all components necessary for a complete and operational facility, as drawn and specified in the Contract Documents.
- C. It is the intent of the Contract Documents to describe a functionally complete Project. Words or phrases used to describe Work, shall be interpreted in accordance with established industry standards and local construction understanding. Clarifications and interpretations of the Contract Documents shall be requested of, and responses issued by, the ARCHITECT as provided in [Article 9.03](#).

3.03 References and Discrepancies

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids.
- B. CONTRACTOR shall immediately notify the ARCHITECT, in writing, upon discovering conflicts, discrepancies, ambiguities, or errors within the Contract Documents or between the Contract Documents and provisions of applicable Codes, Statutes, and Ordinances or written information, instructions, or direction issued by product or system Manufacturers or Suppliers. CONTRACTOR shall not proceed with Work affected (except in emergency, authorized by Article 6.09.e.) until an amendment or supplement to the Contract Documents has been issued.
- C. Except as specifically required by the Contract Documents or provided for, by amendment or supplement; provisions of the Contract Documents shall take precedence in resolving conflicts, discrepancies, ambiguities, or errors between the Contract Documents and:
 - 1. Applicable standards, specifications, manuals, codes, or instructions (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. Codes, Statutes, and Ordinances applicable to the Work (unless provisions of the Contract Documents are in violation of applicable Codes, Statutes, and Ordinances.)
- D. No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of the DISTRICT, the CONTRACTOR, or the ARCHITECT, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the DISTRICT, the ARCHITECT or any of the ARCHITECT's Consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.09 or any other provision of the Contract Documents.

3.04 Amending and Supplementing Contract Documents

- A. Terms and Conditions of the Agreement and/or modifications to the Contract Documents to amend or revise the Scope of Work shall be implemented by issuing:
 - 1. Work Change Directive
 - 2. Written Amendment
 - 3. Change Order
- B. Requirements of the Contract Documents may be supplemented, intent clarified, and minor variations authorized, through written (*interpretation or clarification*) communication:
 - 1. Formal response to Requests for Information (RFIs)
 - 2. Review comments on Submittal and Shop Drawing reviews
 - 3. Field Order

3.05 Order of Precedence

- A. Hierarchy of Contract Documents to resolve conflicting information or ambiguities:
 - 1. Change Orders, Work Change Directives or Written Amendment
 - 2. Agreement
 - 3. Addenda
 - 4. General Conditions of the Contract
 - 5. Supplementary General Conditions of the Contract
 - 6. Technical Specifications
 - 7. Contract Drawings
 - 8. Contractor's Bid (Bid Forms)
 - 9. Instructions to Bidders
 - 10. Invitation to Bid

- B. With reference to the Drawings the order of precedence shall be as follows:
 - 1. Figures govern over scaled dimensions
 - 2. Detail drawings govern over general drawings
 - 3. Addenda or Change Order drawings govern over Contract Drawings
 - 4. Contract Drawings govern over shop drawings

3.06 Reuse of Documents

CONTRACTOR and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the DISTRICT, (i), shall not have, nor acquire, any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of the ARCHITECT or the ARCHITECT's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of the ARCHITECT or the ARCHITECT's Consultant, and (iii), shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project without written consent of the DISTRICT and the ARCHITECT and specific written verification or adaptation by the ARCHITECT.

3.07 Electronic Data

- A. Data and Information provided, in electronic media format, including text, graphics, and other file types, by the DISTRICT or ARCHITECT to the CONTRACTOR or by CONTRACTOR to the DISTRICT or ARCHITECT, may only be relied upon, when transmitted in an agreed upon protocol. Critical Contract Documents shall only be transferred by secure protocol, established in the Pre-Construction Meeting. Any information obtained or derived from non-secure electronic files, and used or referenced in the WORK, shall be at the user's sole risk.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within ten (10) business days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the ten (10) business day acceptance period shall be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - WORK SITE

4.01 Availability of Site

- A. Areas indicated in the Contract Documents upon which the Work is to be constructed, including rights-of-way and easements for access thereto, shall be designated by the DISTRICT. The DISTRICT shall provide access to the CONTRACTOR, for the duration of the WORK.
- B. The Site is the Headquarters of the Goleta West Sanitary District, located on Santa Barbara Municipal Airport property in the City of Santa Barbara, Santa Barbara County, State of California. The Site is accessed through the campus of the University of California, Santa Barbara (UCSB). Associated utility service work may extend onto the UCSB campus.
- C. The Site is immediately adjacent to the Goleta Slough, designated an environmentally sensitive wetland.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings:

1. As a part of the Project Development and approval process; Environmental Reports were prepared. In support of the Technical Design of the project, and a Geotechnical Report was prepared to ascertain the design capacity and capabilities of the Site soils. Although such reports are not a part of the Contract Documents, the Bidder may rely upon the general accuracy of specified technical data contained in such reports. However, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained therein or the completeness thereof is the responsibility of the Bidder. Copies of such reports will be made available, by the District, upon request.
2. Information and data relative to below grade utilities and services within or contiguous to the site is based upon Survey information prepared at the request of the District. The Survey is provided, for reference purposes, within the bound set of Project Drawings.

B. CONTRACTOR may rely upon the general accuracy of specified "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Except for such reliance on such specified "technical data," the CONTRACTOR may not rely upon nor make any claim against the DISTRICT, the ARCHITECT, or any of the ARCHITECT's Consultants.

4.03 Hazardous Materials:

- A. The DISTRICT believes the Site is free of Hazardous Materials. In the unlikely case that Asbestos, or other Hazardous Material, such as Lead Paint is uncovered or revealed during demolition; the DISTRICT will assume responsibility for its removal.
- B. The CONTRACTOR shall immediately stop all Work and immediately notify the Owner if a Hazardous Material is revealed.
- C. The CONTRACTOR shall not be required to resume Work in the area where the Hazardous Material exists until after the DISTRICT has obtained any required permits related thereto and delivered to the CONTRACTOR special written notice specifying that such condition and any affected area is or has been rendered safe for the resumption of Work.

4.04 Construction Staging and Storage

Staging and storage of construction vehicles, equipment, and materials shall be on-site, and coordinated with the District. Staging and storage within the public right-of-way, requires specific Public Works Permit.

4.05 Existing Facilities and Conditions

- A. The information and data shown or indicated in the Contract Documents with respect to Existing Facilities and Conditions, including subsurface, at or contiguous to the Site is based on information and data prepared for the District, by other entities, and provided to the Architect, for reference in developing the Construction Documents.
 1. Neither the District, nor the Architect shall not be responsible for the accuracy or completeness of any such information or data; and
 2. The cost of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. Reviewing and checking all such information and data,
 - b. Locating all Existing Facilities and Conditions, including subsurface, shown or indicated on the plans.
 - c. The safety and protection of all Existing Facilities and Conditions, including subsurface, that are to remain and repairing any damage thereto resulting from the Work.

- B. If an Existing Facility or Condition, including subsurface, is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall immediately notify the ARCHITECT for direction. If it is determined that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences.

4.06 Differing Site Conditions

- A. CONTRACTOR shall notify the DISTRICT, in writing, of the following unforeseen conditions (hereinafter called differing site conditions) promptly upon their discovery (but in no event later than five (5) days) and before they are disturbed:
 - 1. Subsurface or latent physical conditions at the site of the Work differing materially from those indicated, described, or delineated in the Contract Documents.
 - 2. Unknown physical conditions at the site of the Work of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents.
- B. The ARCHITECT will review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto, and advise the DISTRICT, in writing, of the ARCHITECT's findings and conclusions. If the DISTRICT concludes that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the difference.
- C. In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Times, or any combination thereof, will be allowable to the extent that they are attributable to any such difference. If the DISTRICT and the CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made per Articles 11 and 12.
- C. The CONTRACTOR's failure to give notice of differing site conditions within five (5) days of their discovery or before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

- A. Upon receipt of Notice of Award, CONTRACTOR shall furnish Performance and Payment Bonds, each in the amount of 100 percent of the Contract Price, as security for the faithful performance and payment of the CONTRACTOR's obligations under the Contract Documents.
- B. These bonds shall remain in effect at least until one (1) year after the date of substantial completion, except as otherwise provided by law or regulation or by the Contract Documents. CONTRACTOR shall furnish such other bonds as required by the Contract Documents. Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws, and shall be executed by sureties as are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies published in the U.S. Treasury Department's Circular 570. All bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act. Sureties shall be licensed and authorized to issue bonds, in California, for the limits required.
- C. If the surety on any Bond furnished by the CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the WORK is located; the CONTRACTOR shall, within seven (7) business days thereafter substitute another Bond and surety, both of which must be acceptable to the DISTRICT.

5. Builder's Risk: This insurance shall be of the "all risk" type, and shall be written in completed value form in an amount equal to the Contract Price, and shall provide coverage for the project against risks of damage to buildings, structures, and materials and equipment. The amount of such insurance shall be not less than the insurable value of the WORK at completion. Builder's Risk insurance shall provide for losses to be payable to the CONTRACTOR and the DISTRICT, as their interests may appear. This insurance shall include coverage, but not by way of limitation, for all damage or loss to the Work and to appurtenances, to materials and equipment to be used on the Project while the same are in transit, stored on or off the Project site, to construction plant and temporary structures. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the CONTRACTOR, the DISTRICT, the ARCHITECT, and the DISTRICT's Consultants. The Builder's Risk policy shall insure against all risks of direct physical loss or damage to property from any external cause including flood and earthquake.
6. The original or a certified copy of each insurance policy and endorsements thereto shall be deposited with the DISTRICT prior to execution of the Agreement. Specific language of the policy shall be subject to approval of the DISTRICT.

5.03 Policy Requirements

- A. Insurance provided by the CONTRACTOR hereunder shall be (1) with companies licensed to do business in the state of California, (2) with companies with a Best's Financial Rating of VII or better, and (3) with companies with a Best's General Policy Policyholders Rating of not less than A, except that in case of Worker's Compensation Insurance, participation in the State Fund, where applicable, is acceptable.
- B. Insurance policies required hereunder which are required to have the DISTRICT, the District's Consultants, the ARCHITECT, and the Architect's Consultants for the project named as additional insured shall, (1) include a provision that the policies are primary and do not participate with nor are excess over any other valid and collectible insurance, (2) include a waiver of subrogation against the DISTRICT, its agents and employees, (3) include a provision that the insurance, subject to all its other terms and conditions, shall apply to the liability assumed by the CONTRACTOR under the Contract Documents; (4) provide that the CONTRACTOR's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insured's liability, and (5) for Builders All Risk Insurance, provide for deductible amounts not exceeding five (5%) percent of the insurable values of the WORK of the CONTRACTOR for the perils of all risks of physical loss or damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, flood, and acts of God as defined in Public Contract Code Section 7105, and claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- C. The above insurance coverage shall not limit the indemnification obligations of the CONTRACTOR as provided below and the failure to maintain the required coverages shall constitute a material breach of this Agreement.

5.04 District Liability Insurance

In addition to the insurance required to be provided by the CONTRACTOR, the DISTRICT, at the DISTRICT's option, may purchase and maintain at the DISTRICT's expense the DISTRICT's own liability insurance as will protect the DISTRICT against claims which may arise from operations under the Contract Documents.

5.05 Waiver of Rights

The DISTRICT and the CONTRACTOR intend that all stipulated policies purchased will protect the DISTRICT, the CONTRACTOR, Subcontractors, the ARCHITECT, the Architect's Consultants and shall be listed as insured or additional insured in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insured or additional insured thereunder. The DISTRICT and the CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work.

5.06 Receipt and Application of Insurance Proceeds

- A. Any insured loss under the policies of stipulated insurance required will be adjusted with the DISTRICT and made payable to the DISTRICT as fiduciary for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause. The DISTRICT shall deposit in a separate account any money received and shall distribute it in accordance with such agreement as the parties may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys received applied on account thereof and the Work and the cost thereof covered by Change Order or Written Amendment.
- B. The DISTRICT as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to the DISTRICT's exercise of this power. If such objection be made, the DISTRICT as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, the DISTRICT as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, the DISTRICT as fiduciary shall give bond for the proper performance of such duties.

5.07 Acceptance of Bonds

- A. If either party (the DISTRICT or the CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten (10) days after receipt of certificates (or other evidence requested) required.
- B. The DISTRICT and the CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain the Bonds or insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the CONTRACTOR, such insurance in the name of the CONTRACTOR, or Subcontractor, as the DISTRICT may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which may be found or become due to the CONTRACTOR under this Contract party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.08 Partial Utilization -- Property Insurance

If the DISTRICT finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be allowed; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 Supervision and Superintendence

- A. CONTRACTOR shall supervise, inspect, and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. CONTRACTOR shall be responsible to ensure that the completed WORK complies with the intent of the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent Resident Superintendent who shall not be replaced without written notice to the District and Architect except under extraordinary circumstances. The Resident Superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the Resident Superintendent shall be binding on Contractor.

6.02 Labor, Materials, and Equipment

- A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. Whenever District notifies Contractor in writing that any person on the Work appears incompetent, disorderly, or otherwise unsatisfactory, such person shall be removed from the Work and shall not again be employed on it except with the consent of the District.

Except as otherwise required for the safety or protection of persons or the WORK or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and the CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without the DISTRICT's written consent given after prior written notice to the ARCHITECT. Regular working hours are defined as eight hours per day, Monday through Friday, excluding holidays, between the hours of 7:00 a.m. and 4:00 p.m. If the CONTRACTOR performs any work after regular working hours, or on Saturday, Sunday, or any legal holiday, it shall pay the DISTRICT any additional cost incurred by the DISTRICT as a result of such work.

- B. Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities, and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the WORK.
- C. All materials and equipment incorporated into the Work shall be as specified or as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of the District.
- D. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.03 Adjusting Progress Schedule

- A. CONTRACTOR shall adhere to the Progress Schedule established in accordance with the provisions of the specifications, as it may be adjusted from time to time as provided below:
 - 1. Contractor shall submit proposed adjustments to the Progress Schedule, that will not result in changing the Contract Times, to Architect for review. Such adjustments will comply with any applicable provisions of the General Conditions.

2. Proposed adjustments to the Progress Schedule, that will affect the Contract Time, shall be submitted accordance with the General Conditions. Adjustments in Contract Times may only be made by a Change Order.

6.04 Subcontractors, Suppliers, and Others

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity whether initially or as a replacement, against whom the District may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. CONTRACTOR shall be fully responsible to the DISTRICT and the ARCHITECT for the acts and omissions of its Subcontractors and their employees to the same extent as the CONTRACTOR is responsible for the acts and omissions of its own employees. Nothing contained in this Article shall create any contractual relationship between the DISTRICT or the ARCHITECT and any sub-contractor, nor shall it relieve the CONTRACTOR of any liability or obligation under the prime Contract.
- C. CONTRACTOR shall be fully responsible to the DISTRICT and the ARCHITECT for all acts and omissions of the Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with the CONTRACTOR just as the CONTRACTOR is responsible for the CONTRACTOR's own acts and omissions.
- D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with the CONTRACTOR.
- E. All Work performed for the CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between the CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT and the ARCHITECT.
- F. Nothing in the Contract Documents shall create any obligation on the part of the DISTRICT or the ARCHITECT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- G. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with the ARCHITECT through the CONTRACTOR.

6.05 Permits, License Fees, and Royalties

- A. CONTRACTOR shall obtain and pay for all construction permits and licenses from the agencies having jurisdiction, including the furnishing of insurance and bonds if required by such agencies. Enforcement of such requirements under this Contract shall not be made the basis of claims for additional compensation. DISTRICT shall assist the CONTRACTOR, if necessary, in obtaining permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids, or if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the WORK.
- B. CONTRACTOR shall pay all license fees, royalties, and incidental costs incurred through use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of the DISTRICT or the ARCHITECT its use is subject to patent rights or copyrights calling for payment of use or licensing fees or royalties; the existence of such rights shall be disclosed by the DISTRICT, and shall defend all such claims in connection with any alleged infringements.

- C. CONTRACTOR shall indemnify and hold harmless the DISTRICT, Architect, and officers, directors, partners, employees, agents, consultants, and Subcontractors of each, from and against all claims, damages, losses, and expenses (including attorney's fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product, or device not specified in the Contract Documents.

6.06 Laws and Regulations

- A. Work Site is the Goleta West Sanitary District, Headquarters located on Santa Barbara Municipal Airport property, in the City and County of Santa Barbara, State of California. Site is accessed through the campus of the University of California, Santa Barbara (UCSB). Utility service work may extend onto the UCSB Campus. CONTRACTOR shall comply with applicable ordinances, regulations, and other lawful requirements of said District, University, Municipal Airport, City, County, and State.
- B. CONTRACTOR shall observe and comply with all federal, state, and local laws, ordinances, codes, orders, and regulations which in any manner affect those engaged or employed on the WORK, the materials used in the WORK, or the conduct of the WORK.
- C. CONTRACTOR and its Subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code, Section 12900 et seq.), the regulations promulgated there under (Cal. Code of Regulations, Title 2, Section 7285.0 et seq.), and the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Gov. Code (Gov. Code, Section 11135 et seq).
- D. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither the DISTRICT nor ARCHITECT shall be responsible for monitoring the CONTRACTOR's compliance with any Laws or Regulations.
- E. If the CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, the CONTRACTOR shall bear all claims, costs, losses and damages caused by, arising out of or resulting there from.

6.07 Taxes

CONTRACTOR shall pay required sales, use, and similar taxes associated with performance of the Work, in accordance with applicable Laws and Regulations of the place of the Project.

6.08 Use of Premises

- A. Project Site is the Headquarters of the Goleta West Sanitary District and must remain operational and unencumbered, throughout the course of Demolition and Construction.
- B. Goleta West Sanitary District Headquarters is located immediately adjacent to environmentally sensitive wetlands. Contractor shall comply with applicable regulatory and environmental protection requirements. Contractor shall have designated personnel monitor the work and procedures in place to ensure that the wetlands are not infringed upon or impacted in any manner. CONTRACTOR shall assume full responsibility for any infringement, impact, or damage to any portion of the adjacent wetlands.
- C. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to (1) the Project site, (2) the areas identified in and permitted by the Contract Documents, and (3) the other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements. Contractor shall not unreasonably encumber the premises with construction equipment or other materials or equipment.
- D. CONTRACTOR shall assume full responsibility for any damage to the Site, adjacent area, facilities scheduled to remain, portions of the site and/or facilities outside of the Scope of Work, equipment, or occupant thereof, resulting from the performance of the WORK. Contractor's responsibility shall extend to repair or replacement, at its own expense, of any element damaged.

- E. Should any claim be made against the DISTRICT, by any entity, resulting from performance of the WORK, by the CONTRACTOR. The CONTRACTOR shall promptly attempt to settle such claims through negotiation, arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend and hold harmless the DISTRICT, the ARCHITECT, the ARCHITECT's Consultants and anyone directly or indirectly employed by any of them from and against all claims, damages, losses, and expenses (including, but not limited to, fees of architects, engineers, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly, or consequently out of any claim or action, legal or equitable, brought by any such owner or occupant against the DISTRICT, or other party against the DISTRICT to the extent caused by or based upon performance of the WORK.

6.09 Safety and Protection

- A. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. Contractor shall dispose of waste and debris in legal manner and pay fees associated with the disposal.

At the completion of the Work, CONTRACTOR shall remove waste materials, rubbish and debris from the premises as well as all tools, appliances, construction equipment, machinery, and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by the DISTRICT at Substantial Completion of the Work. CONTRACTOR shall restore to original condition property, structures, and surfaces not designated for alteration.

- B. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.
- C. CONTRACTOR shall be solely responsible for initiating, maintaining, and supervising safety precautions and programs connected with the WORK. CONTRACTOR shall take necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss.
- D. CONTRACTOR shall comply with applicable Laws and Regulations (whether referred to herein or not) of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent properties, utilities, and services when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the CONTRACTOR.
- E. CONTRACTOR's duties and responsibilities for safety and protection of the Work shall continue until the Work is complete and has been accepted, as such, by the ARCHITECT and DISTRICT and CONTRACTOR's Close Out Responsibilities, as specified, have been met.
- F. Situations potentially affecting the safety or protection of personnel, the WORK, SITE, facilities, equipment, or adjacent property adjacent to the site, shall be immediately addressed by the CONTRACTOR, without awaiting direction or authorization from the ARCHITECT or DISTRICT, to mitigate or minimize potential damage, injury, or loss. CONTRACTOR shall promptly notify the ARCHITECT in writing if the CONTRACTOR believes that significant deviation to the Work has resulted from such action. If the ARCHITECT determines that adjustments to the Contract Documents are necessary to mitigate changes to the Work; a Change Request or Change Order will be issued, with the District's concurrence.

- G. CONTRACTOR shall designate a qualified and experienced Site Safety Representative whose responsibility shall be to implement, supervise and maintain a construction safety program. CONTRACTOR's safety representative shall be certified by the Board of Certified Safety Professionals as a Certified Safety Professional.
- H. Precaution shall be exercised by the CONTRACTOR, at all times, for the protection of on-Site personnel and property. Safety provisions of all applicable laws, and of building and construction codes shall be observed.
- I. CONTRACTOR shall promptly report in writing to the ARCHITECT all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or adjacent to the site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. If death or serious injury or damage are caused, the accident shall be reported immediately by telephone or messenger to the DISTRICT and the ARCHITECT.
- J. CONTRACTOR shall make all reports as are, or may be, required by any governmental entity having jurisdiction, and permit all safety inspections of the Work being performed under this Agreement. Before proceeding with any construction work, CONTRACTOR shall take all necessary actions to comply with all provisions for safety and accident prevention.
- K. The performance of the Work shall strictly adhere to the COVID-19 safety and procedures plan approved by the DISTRICT pursuant to paragraph 2.06.C.5. If required by the District, the CONTRACTOR shall ensure that any of the CONTRACTOR's employees, Subcontractors, suppliers, or vendors, or any other individual visiting the Project Site with the CONTRACTOR's knowledge or approval, shall review and execute a COVID-19 Waiver and Release of Liability form which will be provided by the DISTRICT. The CONTRACTOR shall maintain the records of these executed COVID-19 Waiver and Release of Liability forms for a period of five years following the execution of the Unconditional Waiver and Release Upon Final Payment.

6.10 Record Documents

CONTRACTOR shall maintain, on SITE, a record of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as issued. Contractor shall maintain comprehensive documentation of 'as-constructed' conditions through diligent annotation of the Record Contract Documents. Any and all adjustments, modifications (*additions and deletions*), substitutions, and alternative installations shall be clearly and legibly layered onto the Record Contract Documents in such a manner that the 'changes' are readily discernable.

Record Documents together with reviewed Shop Drawings, Submittals, and (Physical) Samples shall be maintained and be readily available to the ARCHITECT for reference throughout the course of demolition and construction.

Upon completion of the Work, these Record Documents, Samples, and Shop Drawings shall be delivered to the DISTRICT, through the Architect. Contractor shall provide a 'Hard Copy' of the Record Documents, with backup on electronic media. Final payment will not be acted upon until the CONTRACTOR has delivered these to the DISTRICT.

6.11 Shop Drawings and Samples

- A. Where Shop Drawings are required by the Contract Documents or requested by the ARCHITECT; CONTRACTOR shall submit these in Portable Document Format (PDF). Should a submittal not be available as a PDF, Contractor shall submit two (2) 'hard' copies of each to the ARCHITECT. One will be retained, by the ARCHITECT and the other returned to the Contractor. *Additional copies may be submitted, if required for the Contractor's use.*

"Shop Drawings" as used in this Article shall be understood to include detailed design calculations, fabrication and installation drawings, erection and connection drawings, lists, graphs, catalog, product, or material cutsheets, data sheets, environmental mitigation plans, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate Engineering discipline and in the state of California.

- B. All Shop Drawing submittals shall be accompanied by the CONTRACTOR's standard submittal transmittal form.
- C. A separate transmittal form shall be used for each specific product, item, material, or equipment for which a submittal is required. Transmittal of multiple, various, and disparate products, items, materials, or equipment utilizing a single transmittal form will be accepted when the elements, taken together, constitute a manufacturer's "package" or are functionally related and expediency would dictate review of the group or package together or, as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the ARCHITECT.
- D. Except as may be otherwise indicated herein; the ARCHITECT will respond to the CONTRACTOR'S submittal, returning a copy of each to the CONTRACTOR within fifteen (15) calendar days following their receipt. Unless additional copies, of a submittal, were provided by the CONTRACTOR for their specific use; the ARCHITECT will return a single copy to the CONTRACTOR.
- E. The returned submittal shall note the ARCHITECT's response comments and required action through means of an applied 'stamp.' Responses noted on the ARCHITECT'S stamp should be self-evident.
- F. Procurement, fabrication, delivery, or incorporation into the work of a product, item, material, or equipment, prior to submittal to the ARCHITECT, as specified, or prior to receipt of the ARCHITECT'S response, will be at the CONTRACTOR'S, sole, assumed, risk and expense.
- G. Submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR, prior to submission to the ARCHITECT. Each submittal shall be dated, signed, and certified by the CONTRACTOR, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for response by the ARCHITECT of any CONTRACTOR submittals will be made for any items which have not been so certified by the CONTRACTOR. All non-certified submittals will be returned to the CONTRACTOR without action taken by the ARCHITECT, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.
- H. Submittal of samples, requested in the Technical Specifications, shall follow the same protocols as those for Shop Drawings.
- I. Samples are requested in the Specifications due to the capability of samples to convey physical attributes for review and coordination with other design components. Physical samples are required as color, texture, and scale vary by Manufacturer and region. Manufacturer's printed literature will not suffice. Minimum of two (2) physical samples are required, such that one shall be maintained in the field, and the other shall be retained by the Architect.
- J. ARCHITECT's response to a CONTRACTOR'S submittal, shall not relieve the CONTRACTOR of their responsibility for variation from the requirements of the Contract Documents.
- K. The Architect's review of Shop Drawings and Submittals is for compliance with the Design Intent of the Contract Documents.
- L. The Contractor retains responsibility for compliance with the Contract Documents.

6.12 Continuing the Work

CONTRACTOR shall carry on the WORK and adhere to the Progress Schedule required to be submitted hereunder during all disputes or disagreements with the DISTRICT. No work shall be delayed or postponed pending resolution of any disputes or disagreements, or as the DISTRICT and CONTRACTOR may otherwise agree in writing.

6.13 Warranty and Guarantee

- A. CONTRACTOR warrants and guarantees to the DISTRICT, the ARCHITECT and the ARCHITECT's Consultants that all Work will be in accordance with the Contract Documents and will not be defective.
- B. CONTRACTOR'S warranty and guarantee hereunder excludes defects or damage caused by:
 - i) abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
 - ii) normal wear and tear under normal usage.

6.14 Indemnification

- A. CONTRACTOR shall defend, indemnify, protect and hold the DISTRICT and the ARCHITECT and their agents, consultants, officers, elected officials, directors and employees harmless from and against any and all liabilities, claims, costs, expenses, losses, damages and fees established, asserted, or incurred which arise out of, relate to or result from the Work, the Agreement, the Contract Documents and any and all documents prepared or services performed in connection with the Work, as well as the failure, neglect, or refusal of CONTRACTOR or its Subcontractors, subconsultants, agents, officers or employees to perform the Work or any other obligations of CONTRACTOR under the Contract Documents, except as provided.

Indemnification shall include, but not be limited to, the costs, expenses and damages incurred by the DISTRICT and the ARCHITECT to defend any and all such claims, stop notices or lawsuits, to which the DISTRICT and the ARCHITECT are made a party. Such indemnification by the CONTRACTOR shall include, but not be limited to:

1. Liability or claims resulting directly or indirectly from the negligence or carelessness of the CONTRACTOR, Subcontractors and suppliers, or their employees, or agents in the performance of the Work, or in guarding or maintaining the same, or from any improper materials, implements, or appliances used in its construction, or by or on account of any act or omission of the CONTRACTOR, Subcontractors and suppliers, or their employees, or agents;
2. Liability or claims arising directly or indirectly from bodily injury, occupational sickness or disease, or death of the CONTRACTOR's, Subcontractor's, or Supplier's own employees engaged in the Work resulting in actions brought by or on behalf of such employees against the DISTRICT and/or the ARCHITECT.
3. Liability or claims arising directly or indirectly from or based on the violation of any law, ordinance, regulation, order, or decree, whether by the CONTRACTOR, Subcontractors, suppliers, or their employees, or agents;
4. Liability or claims arising directly or indirectly from the use or manufacture by the CONTRACTOR, Subcontractors, suppliers, or their employees, or agents in the performance of this Agreement of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, unless otherwise specifically stipulated in this Agreement;
5. Liability or claims arising directly or indirectly from the breach of any warranties, whether express or implied, made to the DISTRICT or any other parties by the CONTRACTOR, Subcontractors, suppliers, or their employees, or agents;
6. Liability or claims arising directly or indirectly from the willful misconduct of the CONTRACTOR, Subcontractors, suppliers, or their employees, or agents; and
7. Liability or claims arising directly or indirectly from any breach of the obligations assumed herein by the CONTRACTOR.

- B. CONTRACTOR'S indemnification obligation under this section shall not apply to any liability attributable to the sole or active negligence or willful misconduct of DISTRICT as determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where DISTRICT'S sole or active negligence or willful misconduct accounts for only a percentage of the liability involved, the obligation of CONTRACTOR will be for that entire portion or percentage of liability not attributable to DISTRICT'S sole or active negligence or willful misconduct.
- C. If the DISTRICT receives any claim or demand or suffers any loss for which CONTRACTOR is responsible under this section, DISTRICT shall promptly make written notification to CONTRACTOR stating the nature and circumstances of the situation. CONTRACTOR shall investigate and respond to DISTRICT'S notification of claim in writing within twenty (20) business days, stating CONTRACTOR'S opinion as to the validity of the DISTRICT'S claim, the causes and responsibility forming the basis for the claim and CONTRACTOR'S intention as to its further action toward resolving the claim. In the event CONTRACTOR refers the matter to its insurance carrier, CONTRACTOR'S written response shall include the name, address and telephone number of the insurance company contact assigned to DISTRICT'S claim.

If CONTRACTOR fails to respond and take action to protect District, in DISTRICT'S reasonable opinion, DISTRICT shall have the right, but not the obligation, to undertake the resolution and/or defense of the claim and to compromise or settle (exercising reasonable business judgment) the claim. CONTRACTOR shall keep DISTRICT informed as to the progress of the claim and any related negotiations and CONTRACTOR shall not finalize any settlement that would not include a full and final release of DISTRICT from all liability.

- D. CONTRACTOR'S indemnification obligations under this Agreement shall not be limited to or restricted by any policy of insurance or contract limit and shall survive the completion of the Project or CONTRACTOR'S services and the termination of this Agreement.

6.15 Assignment of Contract

CONTRACTOR shall not assign, sublet, sell, transfer, or otherwise dispose of the Contract or any portion thereof or its right, title, or interest therein, or obligations there under, without written consent of the DISTRICT, except as imposed by law. If the CONTRACTOR violates this provision, the Contract may be terminated at the option of the DISTRICT. In such event, the DISTRICT shall be relieved of all liability and obligations to the CONTRACTOR and to its assignee or transferee, growing out of such termination.

6.16. Protection of Work

CONTRACTOR shall be responsible for the care of all Work until its completion and final acceptance; and, at its own expense, replace damaged or lost material and repair damaged parts of the work or the same may be done at its expense by the DISTRICT and the CONTRACTOR and its sureties shall be liable therefore. CONTRACTOR shall make its own provisions for properly storing and protecting all material and equipment against theft, injury, or damage from any and all causes. Damaged material and equipment shall not be used in the Work. CONTRACTOR shall take all risks from floods and casualties except as provided by law, and shall make no charge for the restoration of such portions of the Work as may be destroyed or damaged by flood or other casualties or because of danger from flood or other casualties or for delays from such causes. The CONTRACTOR may, however, be allowed a reasonable extension of time on account of such delays, subject to the conditions of the Contract Documents.

6.17 Protections and Controls in Performing the Work

- A. CONTRACTOR shall implement safeguards, procedures, or any necessary means required to prevent its operations, in connection with the execution of the Work from causing abnormal noise, dust, odors, runoff, or other conditions that may be a nuisance or harmful to the adjacent environmentally sensitive area abutting the Site or to individuals occupying buildings in the vicinity of the Work.

- B. CONTRACTOR shall exercise every precaution to protect the adjacent environmentally sensitive area abutting the Site from runoff, debris, and physical damage. Contractor shall monitor the work to ensure compliance. CONTRACTOR shall comply with Section 5650 of the California Fish and Game Code and all other applicable statutes and regulations relating to environmental impacts.

6.18 Temporary Facilities

- A. Contractor shall provide all temporary services, utilities, sanitary conveniences, facilities, enclosures, and security, necessary to prosecute the work, as detailed in Technical Specification Section 01 50 00.
- B. To preclude any potential impact to District operations and its systems; the Contractor shall provide for separate utility connections, for construction purposes and to Temporary Facilities.
- C. All temporary facilities shall be disabled accessible in compliance with applicable laws, statutes, and ordinances.
- D. Contractor shall provide security to protect the Work, stored materials and equipment, and temporary facilities from unauthorized entry, vandalism, and theft. Contractor shall coordinate with Owner's security program. Security within limits of construction shall be Contractor's responsibility.

6.19 Progress Meetings

- A. The Contractor shall schedule all conferences and project meetings, which are intended to facilitate the construction process through regular communication, between the Contractor, Architect and the District. Project Meetings will be held at regular intervals established at Pre-Construction Conference. The Contractor shall ensure the availability of key participants when scheduling critical conferences required in the Technical Specifications.
- B. The Contractor shall develop an Agenda prior to each meeting and conference. Meeting minutes prepared by the Contractor, which serve as documentation of meeting or conference, shall be distributed to the attendees for review and concurrence prior to inclusion in the project record.

ARTICLE 7 - OTHER WORK

7.01 Related Work at Site

The DISTRICT may perform work, on site, with the DISTRICT's own forces, or have others, under separate contract, perform work related to the project, in the same timeframe. The Goleta West Sanitary District Headquarters Site is an operating facility, and it is incumbent upon all contractors on site to minimize impacting or interrupting the DISTRICT's ongoing operations, as well as other work. The DISTRICT will advise CONTRACTORS of all anticipated work, whether related to the project or not. CONTRACTORS, on site, shall coordinate with the DISTRICT regarding critical or significant construction operations that may potentially impact DISTRICT work and operations.

ARTICLE 8 - DISTRICT'S RESPONSIBILITIES

8.01 Communications to Contractor

Except as otherwise provided, the DISTRICT shall issue all DISTRICT related communications, and project related communications as directed in the Contract Documents, to the CONTRACTOR through the DISTRICT'S General Manager/Superintendent. All Project related direction to the CONTRACTOR shall be issued through the ARCHITECT.

8.02 Furnish Data

The DISTRICT shall furnish the data required of the DISTRICT under the Contract Documents promptly and shall make payments to the CONTRACTOR promptly when they are due.

8.03 Lands and Easements; Reports and Tests

The DISTRICT shall make available to the CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and drawings of physical conditions in existing structures at or contiguous to the site, utilized by the ARCHITECT in preparing the Contract Documents.

8.04 Inspections, Tests, and Approvals

The DISTRICT's responsibility in respect of certain inspections, tests, and approvals is set forth in [Article 13.04b](#).

8.05 Suspension of Work

The DISTRICT's right to stop Work or suspend Work, is described in [Article 13.06](#) and [Article 15.01](#). [Article 15.02](#) and [Article 15.03](#) address the DISTRICT's right to terminate services of the CONTRACTOR under certain circumstances.

8.06 Limitations on District's Responsibilities

The DISTRICT shall not supervise, direct, or have control or authority over, nor be responsible for, the CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. The DISTRICT will not be responsible for the CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.07 Hazardous Materials

The DISTRICT's responsibility in respect to Hazardous Materials uncovered or revealed at the site is set forth in Article 4.04.

ARTICLE 9 - ARCHITECT'S RESPONSIBILITIES

9.01 The District's Representative

The DISTRICT's Designated Project Representative is the ARCHITECT.

9.02 Visits to Site

The ARCHITECT, or the ARCHITECT's authorized representative, will visit the site at appropriate intervals of construction, as the ARCHITECT deems necessary, to observe progress made and the quality of the CONTRACTOR's executed Work.

9.03 Clarifications and Interpretations

The ARCHITECT will issue, with reasonable promptness, such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the ARCHITECT may determine necessary.

9.04 Authorized Variations in the Work

The ARCHITECT may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on the DISTRICT and also on the CONTRACTOR, who shall perform the Work involved promptly.

9.05 Rejecting Defective Work

The ARCHITECT, or a designated representative, will have authority to disapprove or reject Work which the ARCHITECT believes to be defective, or that the ARCHITECT believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project.

9.06 Submittal Review

The ARCHITECT will respond to CONTRACTOR submittals, including shop drawings and samples requested or specified, in accordance with specified procedures and the General Requirements of the Technical Specifications.

9.07 Decisions on Disputes

- A. The ARCHITECT is the interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work there under. Claims, disputes, and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and Claims in respect of changes in the Contract Price or Contract Times will be referred to the ARCHITECT in writing with a request for review. Written notice of each such claim, dispute, and/or other matter shall be delivered by the claimant to the ARCHITECT and the DISTRICT promptly (but in no event later than thirty (30) days) after the start of the occurrence or event giving rise thereto.
- B. When functioning as interpreter, and judge, the ARCHITECT will not show partiality to the DISTRICT or the CONTRACTOR and shall not be liable for any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by the ARCHITECT with respect to any such claim, dispute, or other matter will be a condition precedent to any exercise by the DISTRICT or the CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute, or other matter.

9.08 Limitations on the Architect's Authority and Responsibilities

- A. Neither the ARCHITECT's authority or responsibility under any provision of the Contract Documents nor any decision made by the ARCHITECT in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by the ARCHITECT shall create, impose or give rise to any duty owed by the ARCHITECT to the CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.
- B. ARCHITECT will not supervise, direct, control or have authority over or be responsible for the CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. The ARCHITECT will not be responsible for the CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.
- C. ARCHITECT will not be responsible for the acts or omissions of Contractor nor of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.
- D. ARCHITECT's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, and certificates of inspection, tests, and approvals and other documentation required to be delivered will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

- E. The limitations upon authority and responsibility shall also apply to the ARCHITECT's Consultants, Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK

10.01 General

- A. Without invalidating the Agreement and without notice to any surety, the DISTRICT may, at any time or from time to time, order additions, deletions, or revisions in the Work; such additions, deletions or revisions will be authorized by a written Change Order or a Work Directive Change issued by the ARCHITECT. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved.
- B. If the DISTRICT and the CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefore.
- C. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified, and supplemented except in the case of an emergency as provided or in the case of uncovering Work.
- D. The DISTRICT and the CONTRACTOR shall execute appropriate Change Orders recommended by ARCHITECT (or Written Amendments) covering:
 - 1. Changes in the Work which are ordered by the DISTRICT and
 - 2. Changes in the Contract Price or Contract Times which are agreed to by the parties.

Provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided.

- E. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be the CONTRACTOR's responsibility, and the amount of each applicable Bond shall be adjusted accordingly.

ARTICLE 11 - CHANGE TO CONTRACT PRICE

11.01 General

- A. Contract Price constitutes the total compensation (subject to DISTRICT-authorized adjustments) payable to the CONTRACTOR for performing the Work. All duties, responsibilities, and obligations assigned to or undertaken by the CONTRACTOR shall be at its expense without change in the Contract Price.
- B. Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to the ARCHITECT promptly after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within Thirty (30) days after such occurrence (unless the ARCHITECT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the claimant is entitled as a result of the occurrence of said event.

- C. All claims for adjustment in the Contract Price shall be reviewed by the ARCHITECT, if the DISTRICT and the CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with these General Conditions.
- D. The value of any Work covered by a Change Order or Work Directive Change or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:
 - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
 - 2. By mutual acceptance of a lump sum (which may include an allowance for overhead and profit).
 - 3. On the basis of the Cost of the Work, plus the CONTRACTOR's Fee for overhead and profit.

11.02 Cost of Work

- A. General: The term "Cost of Work" shall mean the sum of all costs necessarily incurred and paid by the CONTRACTOR for labor, materials, and equipment plus CONTRACTOR's overhead, and profit in the proper performance of work. Except as otherwise may be agreed to in writing by the DISTRICT, such costs shall be in amounts no higher than those prevailing in the locality of the Project.
- B. Labor: The cost of labor used in performing work by the CONTRACTOR, a subcontractor, or other forces will be the sum of the following:
 - 1. The actual wages paid plus any employer payments to, or on behalf of workers for fringe benefits including health and welfare, pension, vacation, and similar purposes.
 - 2. A labor surcharge set forth in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rates, which is in effect on the date upon which the Work is accomplished and which is hereby included as a part of these General Conditions by this reference will be added to actual wages. Said labor surcharge shall constitute full compensation for all payments imposed by the State and Federal laws and for all other payments made to, or on behalf of, the workers, other than actual wages.

At the beginning of the extra work and later as requested by the ARCHITECT, CONTRACTOR shall furnish proof of labor compensation rates being paid.
- C. Materials: The cost of materials used in performing work will be the cost to the purchaser, whether CONTRACTOR or subcontractor, from the supplier thereof, except as the following are applicable:
 - 1. All materials, products and systems installed in the Work, shall be new, unused and obtained specifically for use in this Work.
 - 2. Trade discounts available to the purchaser shall be credited to the DISTRICT notwithstanding the fact that such discounts may not have been taken by the CONTRACTOR.
- D. Equipment: The CONTRACTOR will be paid for the use of equipment.
 - 1. All equipment shall be in good working condition and suitable for the purpose for which the equipment is to be used.
 - 2. The rental rate to be applied for use of each items of equipment shall be the rate resulting in the least total cost to the DISTRICT for the total period of use.
 - 3. Rental time will not be allowed while equipment is inoperative due to breakdowns.

11.03 Contractor's Extra Work

Work authorized on a time and materials basis will be paid for at the actual necessary cost, plus allowances for overhead and profit. For extra work involving a combination of increases and decreases in the Work the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall include full compensation for superintendence, bond and insurance premiums, taxes, office expense, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided including extended overhead and home office overhead.

11.04 Records

- A. CONTRACTOR shall maintain its records in such a manner as to provide a clear distinction between the direct costs of each separate item of extra work, disputed work, emergency work, or other work paid for on a Cost of Work basis and the costs of other operations.
- B. From the foregoing records, the CONTRACTOR shall furnish the District's General Manager/Superintendent completed Daily Work Reports, on forms furnished by the DISTRICT, for each day's work or portion of each day's work to be paid for, on a Cost of Work basis. The Daily Work Reports shall itemize the materials used and shall cover the direct cost of labor and equipment.
 - 1. Material charges shall be substantiated by valid copies of vendor's invoices.
 - 2. Daily Work Reports shall be signed by the CONTRACTOR or its authorized representative.

ARTICLE 12 - CHANGE TO CONTRACT TIME

12.01 General

- A. Contract Time may only be changed by a Change Order. Any claim for an adjustment of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to the ARCHITECT promptly (but in no event later than Thirty (30) days after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled resulting from the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by the ARCHITECT if the DISTRICT and the CONTRACTOR cannot otherwise agree.
- B. All time limits stated in the Contract Documents are of the essence in the Agreement.
- C. Where the CONTRACTOR is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of the CONTRACTOR, the Contract Time (or Milestones) will be extended in an amount equal to the time lost due to such delay. Delays beyond the control of the CONTRACTOR shall include, but not be limited to, acts or neglect by the DISTRICT, acts or neglect of other contractors performing other work herein, or by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, sabotage, or freight embargoes. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of the CONTRACTOR.

- D. Where the CONTRACTOR is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of both the DISTRICT and the CONTRACTOR, an extension of the Contract Times in an amount equal to the time lost due to such delay shall be the CONTRACTOR's sole and exclusive remedy for such delay. In no event shall the DISTRICT be liable to the CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of the CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by other contractors performing other work.

12.02 Inclement Weather

- A. Inclement weather is any weather condition or conditions resulting immediately there from, causing the CONTRACTOR to suspend construction operations or preventing the CONTRACTOR from proceeding with at least 75 percent of the normal labor and equipment force engaged on the Work.
- B. Should the CONTRACTOR prepare to begin work at the regular starting time at the beginning of any regular work shift on any day on which inclement weather, or the conditions resulting from the weather, or the condition of the WORK prevents work from beginning at the usual starting time, and the crew is dismissed as a result thereof, the CONTRACTOR will not be charged for a working day whether or not conditions change thereafter during said day and the major portion of the day could be considered to be suitable for such construction operations.
- C. The CONTRACTOR shall base its construction schedule upon the inclusion of a number of days of inclement weather entitled "Inclement Weather Delays." No extension of the Contract Time due to inclement weather will be considered until after the said number of days of inclement weather has been reached. However, no reduction in Contract Time will be made if said number of days of inclement weather is not reached.

ARTICLE 13 - DEFECTIVE WORK

13.01 Compliance with Contract Documents

CONTRACTOR warrants and guarantees to the DISTRICT and the ARCHITECT that all work will be in accordance with the Contract Documents and will not be defective. Neither the right to inspect, nor the presence of inspectors, the ARCHITECT, consultants, or testing agencies hired by the DISTRICT or the District's General Manager/Superintendent, nor their general review or approval shall relieve the CONTRACTOR from its obligations to perform the WORK in accordance with the Contract Documents.

13.02 Notice of Defects

Prompt notice of all defective Work of which the DISTRICT or the ARCHITECT has actual knowledge will be given to the CONTRACTOR. All defective Work may be rejected, corrected, or accepted.

13.03 Access to the Work

The DISTRICT, the ARCHITECT, the ARCHITECT's Consultants, other representatives and personnel of the DISTRICT and the District's General Manager/Superintendent, independent testing laboratories and governmental agencies with jurisdictional interests shall have access to the WORK at reasonable times for their observation, inspecting, and testing. The CONTRACTOR shall provide them with proper and safe conditions for such access and advise them of the CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

13.04 Tests and Inspections

- A. CONTRACTOR shall give the ARCHITECT timely notice of readiness of the WORK for all required inspections, tests or approvals, but in no event less than 24 hours' notice. The CONTRACTOR shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. The DISTRICT will employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. For inspections, tests or approvals covered by [Article 13.04.c.](#)
 - 2. For costs incurred in connection with tests or inspections conducted pursuant to [Article 13.05.b.](#)
 - 3. As otherwise specifically provided for in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, the CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish the ARCHITECT the required certificates of inspection, or approval. The CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs connected with any inspections, tests or approvals required for the DISTRICT's and the ARCHITECT's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to the CONTRACTOR's purchase thereof for incorporation in the WORK. Such inspections, tests, or approvals shall be performed by organizations acceptable to the District and Architect.
- D. If any portion of the WORK (or the work of others) that is to be inspected, tested, or approved is covered by the CONTRACTOR without written concurrence of the ARCHITECT, it shall, if requested by the ARCHITECT, be uncovered for observation.

13.05 Uncovering Work

- A. If any WORK is covered contrary to the request of the ARCHITECT, it shall, if requested by the ARCHITECT, be uncovered for required inspection, testing, or observation and replaced at the CONTRACTOR's expense.
- B. If the ARCHITECT considers it necessary or advisable that covered Work be observed, inspected or tested by others, the CONTRACTOR, shall uncover, expose, or otherwise make available for observation, inspection, or testing, that portion of the WORK in question, and shall furnish all necessary labor, material, and equipment. If it is found that such Work is defective, the CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection, and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and the DISTRICT shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefore.
- C. CONTRACTOR shall permit on-site videotaping, still photography, or motion picture photography of the construction project. The DISTRICT will notify the CONTRACTOR prior to the commencement of any videotaping and/or photography by the DISTRICT personnel and/or its agents and shall make a reasonable effort to give the CONTRACTOR at least 24-hours' notice of its intent to video tape or photograph the project. The CONTRACTOR shall cooperate with and shall coordinate with DISTRICT personnel or their authorized representatives in its efforts to carry out such videotaping and/or photography. The CONTRACTOR shall give notice to all employees and subcontractors of such videotaping and/or photography to be out of view of the camera, if requested to do so, during videotaping and or photographing of the construction project. *Use of Drones shall not be permitted, due to proximity of Airport.*

13.06 Stopping the Work

If the WORK is defective, or the CONTRACTOR fails to supply sufficient skilled workers, suitable materials, equipment, or fails to furnish or perform the Work in such a way that the completed WORK will conform to the Contract Documents, the DISTRICT, independently or through the ARCHITECT, may order the CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the DISTRICT to stop the WORK shall not give rise to any duty on the part of the DISTRICT to exercise this right for the benefit of the CONTRACTOR or any surety or other party. If DISTRICT stops Work under this paragraph, CONTRACTOR shall not be entitled to extension of Contract Time or increase in Contract Price.

13.07 Correction or Removal of Defective Work

If required by the ARCHITECT, acting directly or through the Project Representative, the CONTRACTOR shall promptly, as directed, either correct all defective WORK, whether or not fabricated, installed or completed, or, if the WORK has been rejected by the ARCHITECT, the CONTRACTOR shall remove it from the site and replace it with Work that is not defective. The CONTRACTOR shall pay all claims, costs, losses, and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of the Work of others).

13.08 Correction Period

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any WORK is found to be defective, the CONTRACTOR shall promptly, without cost to the DISTRICT and in accordance with the DISTRICT's written instructions: (i) correct such defective WORK, or, if it has been rejected by the DISTRICT, remove it from the site and replace it with Work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting there from.

If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the DISTRICT may have the defective WORK corrected or the rejected WORK removed and replaced, and all direct, indirect and consequential costs of such removal and replacement, including claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by the CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the WORK, the correction period for that item may start to run from an earlier date if so provided in the Contract Documents.

C. Where defective Work has been corrected, removed or replaced, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

13.09 District May Correct Defective Work

A. If the CONTRACTOR fails within a reasonable time after written notice from the ARCHITECT to correct defective Work or to remove and replace rejected Work as required by the ARCHITECT, or if the CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if the CONTRACTOR fails to comply with any other provision of the Contract Documents, DISTRICT may, after Seven (7) days' written notice to the CONTRACTOR, correct and remedy any such deficiency.

- B. In exercising the rights and remedies under this paragraph the DISTRICT shall proceed expeditiously. In connection with such corrective and remedial action, the DISTRICT may exclude the CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend the CONTRACTOR's services related thereto, take possession of the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which the DISTRICT has paid the CONTRACTOR but which are stored elsewhere. The CONTRACTOR shall allow the DISTRICT, the DISTRICT's representatives, agents and employees, the DISTRICT's other contractors and the ARCHITECT and the ARCHITECT's Consultants access to the site to enable the DISTRICT to exercise the rights and remedies under this Article.
- C. All claims, costs, losses and damages incurred or sustained by the DISTRICT in exercising such rights and remedies will be charged against the CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the DISTRICT shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, the DISTRICT may make a claim therefore. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of the CONTRACTOR's defective Work. The CONTRACTOR shall not be allowed an extension of the Contract Time in response to any delay in the performance of the Work attributable to the exercise by the DISTRICT of the DISTRICT's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO THE CONTRACTOR

14.01 Schedule of Values

The Schedule of Values, based on the submitted Bid Schedule, shall serve as the basis for evaluation of progress payments and will be incorporated into a format of Application for Payment acceptable to the ARCHITECT (AIA G702- 1992).

14.02 Application for Progress Payment

- A. Unless otherwise prescribed by law, the CONTRACTOR shall submit, by the 15th of each month, to the ARCHITECT for review, an Application for Payment, completed and signed by the CONTRACTOR, for Work completed the prior Month and accompanied by such supporting documentation as is required by the Contract Documents.
- B. The Application for Payment shall identify, as a sub-total, the amount of the CONTRACTOR's Total Earnings to Date, plus the Value of Materials at the site which have not yet been incorporated into the WORK, and less a deductive adjustment for materials installed which were not previously incorporated into the WORK, but for which payment was allowed under the provisions for payment for Materials Stored at the Site, but not yet incorporated in the WORK.
- C. The Net Payment Due to the CONTRACTOR shall be the above-mentioned sub-total from which shall be deducted the amount of retainage specified in the Contract Documents, and the total amount of all previous payments made to the CONTRACTOR. All CONTRACTOR payment requests must be accompanied by Unconditional Waiver and Release certificates from the CONTRACTOR and all subcontractors and suppliers for whom payment is requested.
- D. In addition to the provisions of the General Conditions for withholding of funds from the Final Payment, the DISTRICT may retain a portion of the amount of each progress payment otherwise due to the CONTRACTOR, as follows:

1. The DISTRICT will retain five (5%) percent of each approved progress payment until the Work is fifty (50%) percent complete; then, the DISTRICT may at its option reduce or suspend further retainage until the final progress payment.
 2. The DISTRICT reserves the right to reinstate at a later time up to Ten (10%) percent retainage of the total of the Work completed if the DISTRICT determines, at its discretion, that the CONTRACTOR is not performing the Work satisfactorily, or there is other specific cause for such retainage.
- E. The value of Materials Stored at the Site shall be an amount equal to the specified percentage of value of such materials. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the site; provided that each such individual item of material or equipment has a value of more than Five Thousand (\$5,000.) Dollars and will become a permanent part of the WORK. The Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CONTRACTOR has received the materials and equipment free and clear of all Stop Notice claims, charges, security interests, and other encumbrances. and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the DISTRICT's interest therein, all of which must be satisfactory to the DISTRICT.

14.03 Contractor's Warranty of Title

The CONTRACTOR warrants and guarantees that title to all WORK, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to the DISTRICT no later than the time of final payment free and clear of all Stop Notice claims.

14.04 Review of Applications for Progress Payments

- A. The ARCHITECT will, within seven (7) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the DISTRICT or return the Application to the CONTRACTOR indicating in writing the ARCHITECT's reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and promptly resubmit the Application. thirty-five (35) days after presentation of the Application for Payment to the DISTRICT with the ARCHITECT's recommendation, the amount recommended will become due and when due will be paid by the DISTRICT to the CONTRACTOR.
- B. The ARCHITECT's recommendation of any payment requested in an Application for Payment acknowledges that the WORK has progressed to the point indicated; the quality of the WORK is generally in accordance with the Contract Documents; and the conditions precedent to the CONTRACTOR's being entitled to such payment appear to have been fulfilled.
- C. The ARCHITECT's recommendation of any payment, including final payment, does not assume responsibility for the CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of WORK, or for any failure of the CONTRACTOR to perform or furnish WORK in accordance with the Contract Documents.
- D. The ARCHITECT may refuse to recommend the whole or any part of any payment, if evidence is subsequently discovered, or the results of subsequent inspections or tests, nullify previously recommended payments, to protect the DISTRICT from loss because:
 1. The WORK is defective, or completed WORK has been damaged requiring correction or replacement,

2. The Contract Price has been reduced by Written Amendment or Change Order,
 3. DISTRICT has been required to correct defective WORK or complete WORK.
 4. The ARCHITECT has actual knowledge of the occurrence of any of the events enumerated in [Article 15](#).
- E. The DISTRICT may refuse to make payment of the full amount recommended by the ARCHITECT because:
1. Claims have been made against the DISTRICT on account of the CONTRACTOR's performance of the WORK or Stop Notices that have been filed pursuant to the provisions of Section 3179 et seq. of the California Civil Code
 2. Stop Notices have been filed in connection with the WORK, except where the CONTRACTOR has delivered a Stop Notice Release Bond satisfactory to the DISTRICT to secure the satisfaction and discharge of such Liens,
 3. There are other items entitling the DISTRICT to a credit against the amount recommended.
 4. The DISTRICT has actual knowledge of the occurrence of any of the events enumerated in [Article 14.05.d](#). or [Article 15.02.a](#)

14.05 Beneficial Use or Occupancy and Partial Utilization

- A. Partial Utilization: The DISTRICT shall have the right, if approved by the Agency Having Jurisdiction, to utilize or place into service any item of equipment or other usable portion of the WORK prior to completion of the total WORK. Whenever the DISTRICT plans to exercise said right, the CONTRACTOR will be notified in writing by the DISTRICT, identifying the specific portion or portions of the WORK to be so utilized or otherwise placed into service.
- B. It shall be understood by the CONTRACTOR that until such written notification is issued, all responsibility for care and maintenance of all items or portions of the WORK to be partially utilized shall be borne by the CONTRACTOR. Upon issuance of said written notice of partial utilization, the DISTRICT will accept responsibility for the protection and maintenance of all such items or portions of the WORK described in the written notice.
- C. Beneficial Use or Occupancy: The DISTRICT shall have the right, at its option and convenience, to occupy or otherwise make use of all or any part of the project premises at any time prior to substantial completion, upon fourteen (14) days written notice to the CONTRACTOR. Beneficial occupancy or use shall be subject to the following conditions:
1. All requisite approvals are obtained from the Agencies Having Jurisdiction and responsibility for issuing Permits for Occupancy.
 2. The DISTRICT shall use its best efforts to prevent occupancy from interfering with the conduct of the CONTRACTOR's remaining work.
 3. CONTRACTOR shall not be required to repair damage to the premises if the same was caused by the DISTRICT's occupancy or use.
 4. The one-year correction period for those portions of the premises occupied and equipment used by the DISTRICT shall start as of the date of actual occupancy or use.
 5. Occupancy or use shall not constitute acceptance by the DISTRICT either of the completed work or any portion thereof, nor will it relieve the CONTRACTOR from full responsibility for correcting defective work or materials found before completion and acceptance of all the work during the period specified.

6. Occupancy or use shall not be deemed to be the equivalent of filing a Notice of Substantial Completion/Notice of Completion or a Cessation of Labor.
7. There shall be no added cost to the DISTRICT due to pre-completion occupancy or use;
8. CONTRACTOR and its surety shall execute a "No Change in Price" Change Order.
9. Effective 12:01 a.m. (Local) standard time at the project site on the date of beneficial occupancy or use stipulated in the Change Order, the CONTRACTOR shall be released from the obligations of maintaining fire and extended coverage insurance covering those portions of the premises occupied by the DISTRICT, but shall maintain all other insurance required by the Contract in full force and effect. The DISTRICT shall obtain fire and extended coverage insurance or maintain equivalent self-insurance covering those portions of the premises occupied.

14.06 Substantial Completion

- A. When the CONTRACTOR considers the entire Work ready for its intended use the CONTRACTOR shall notify the DISTRICT and the ARCHITECT in writing, that the entire Work is substantially complete (except for items specifically listed by the CONTRACTOR as incomplete) and request that the ARCHITECT issue a Notice of Completion/Substantial Completion.
- B. Within a reasonable time thereafter, the DISTRICT, the CONTRACTOR, and the ARCHITECT shall observe the WORK to determine the status of completion. If the WORK is not deemed substantially complete, the ARCHITECT, will notify the CONTRACTOR in writing, giving the reasons therefore.
- C. If the WORK is deemed substantially complete, the ARCHITECT will prepare and deliver to the DISTRICT for its execution and recordation the Notice of Substantial Completion/Notice of Completion signed by the DISTRICT, the ARCHITECT, and the CONTRACTOR, which shall fix the date of Completion. As applicable, there shall be attached to the Notice a list of items to be completed or corrected before release of retainage or funds withheld to secure payment for such items remaining to be completed or corrected.
- D. At the time of delivery of the tentative Notice of Substantial Completion the ARCHITECT will deliver to the DISTRICT and the CONTRACTOR a written recommendation as to division of responsibilities pending final payment between the DISTRICT and the CONTRACTOR.
- E. Completion shall mean Substantial completion, which shall mean substantial performance of the Contract as defined in Black's Law Dictionary 4th Edition, by West Publishing Co., St. Paul Minn.
- F. The DISTRICT shall have the right to exclude the CONTRACTOR from the Work after the date of Substantial Completion, but the DISTRICT shall allow the CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.07 Partial Utilization

Use by the DISTRICT at the DISTRICT's option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) the DISTRICT, the ARCHITECT and the CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by the DISTRICT for its intended purpose without significant interference with the CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

- A. The DISTRICT at any time may request the CONTRACTOR in writing to permit the DISTRICT to use any such part of the Work which the DISTRICT believes to be ready for its intended use and substantially complete. If the CONTRACTOR agrees that such part of the Work is substantially complete, the CONTRACTOR will certify to the DISTRICT and the ARCHITECT that such part of the Work is substantially complete and request the ARCHITECT to issue a Notice of Substantial Completion for that part of the Work. The CONTRACTOR at any time may notify the DISTRICT and the ARCHITECT in writing that the CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request the ARCHITECT to issue a Notice of Substantial Completion for that part of the Work. Within a reasonable time after either such request, the DISTRICT, the CONTRACTOR, and the ARCHITECT shall observe that part of the Work to determine its status of completion.

- B. If that part of the Work is deemed not to be substantially complete, the ARCHITECT will notify the DISTRICT and the CONTRACTOR in writing giving the reasons therefore.
 - 1. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of Article 5.08, Partial Utilization.

 - 2. All requisite approvals are obtained from the Agencies Having Jurisdiction and responsibility for issuing Permits for Occupancy.

14.08 Final Inspection

Upon written notice from the CONTRACTOR that the entire Work or an agreed portion thereof is complete, the ARCHITECT will make a final observation of the work with the DISTRICT and the CONTRACTOR and will notify the CONTRACTOR in writing of all particulars in which the Work is incomplete or defective. The CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.09 Final Application for Payment

- A. After the CONTRACTOR has completed all such corrective work, and delivered, in accordance with the Contract Documents or other evidence of insurance, certificates of inspection, marked-up record documents, and other documents, all as required by the Contract Documents, and after the ARCHITECT has indicated that the WORK is substantially complete and meets the intent of the construction documents the CONTRACTOR may make application for Final Payment.

- B. The Final Application for Payment shall be accompanied (except as previously delivered) by:
 - (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to the DISTRICT) of all Stop Notices arising out of or filed in connection with the WORK.

- C. In lieu of such releases or waivers of Liens and as approved by DISTRICT, the CONTRACTOR may furnish receipts or releases in full and an affidavit of the CONTRACTOR that: (i) the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and (ii) all payrolls, material and equipment bills and other indebtedness connected with the WORK for which the DISTRICT or the DISTRICT's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, the CONTRACTOR may furnish a Stop Notice Release Bond or other collateral satisfactory to the DISTRICT to indemnify the DISTRICT against any Lien.

14.10 Final Payment and Acceptance

- A. Final Payment is defined as the last progress payment made to the CONTRACTOR for earned funds, less retainage or other withheld funds, as applicable.
- B. If, based on the ARCHITECT's observation of the WORK and review of the final Application for Payment and accompanying documentation, the CONTRACTOR obligations under the Contract Documents have been fulfilled, the ARCHITECT will, within fourteen (14) days after receipt of the final Application for Payment, issue a final recommendation of payment and concurrently issue written notice to the DISTRICT and the CONTRACTOR that the WORK is complete. If the WORK is not deemed complete, the ARCHITECT will return the Application to the CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment.
- C. After acceptance of the WORK by the DISTRICT's governing body, the DISTRICT will make Final Payment to the CONTRACTOR of the amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract Documents, including the following items:
 - 1. Retainage of not less than five (5%) percent of the contract price.
 - 2. Liquidated damages, as applicable.
 - 3. One and one-half times the value of outstanding items of correction work or punch list items indicated on the Notice of Completion as being yet uncompleted or uncorrected, as applicable. All such work shall be completed or corrected to the satisfaction of the DISTRICT within the time stated on the Notice of Substantial Completion/Notice of Completion; otherwise the CONTRACTOR does hereby waive any and all claims to all monies withheld by the DISTRICT to cover the value of all such uncompleted or uncorrected items.

14.11 Release of Retainage and Other Deductions

- A. After executing the necessary documents to initiate the Stop Notice filing period, and not more than forty-five (45) days thereafter (based upon a thirty (30) day filing period and fifteen (15) day processing time), the DISTRICT will release to the CONTRACTOR the retainage funds or securities withheld pursuant to the Agreement, less any deductions to cover pending claims against the DISTRICT.
- B. During said Stop Notice filing period, the CONTRACTOR shall have thirty (30) days to complete or correct any work items remaining on the Final Punch List, that was made a part of the Notice of Substantial Completion/Notice of Completion. Upon completion of the work enumerated in the final punch list, to the satisfaction of the DISTRICT, within said thirty (30) days, the amounts withheld will be released to the CONTRACTOR. Otherwise, the CONTRACTOR shall waive any and all claims for all monies withheld by the DISTRICT under the Contract to cover 2 times the value of such remaining uncompleted or uncorrected items.
- C. If, through no fault of the CONTRACTOR, final completion of the WORK is significantly delayed and if the ARCHITECT so confirms, the DISTRICT will, upon receipt of the CONTRACTOR's final Application for Payment and recommendation of the ARCHITECT, and without terminating the Agreement, make payment of the balance due for that portion of the WORK fully completed and accepted. If the remaining balance to be held by the DISTRICT for WORK not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished, the written consent of the surety to the payment of the balance due for that portion of the WORK fully completed and accepted shall be submitted by the CONTRACTOR to the ARCHITECT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

14.12 Contractor's Continuing Obligation

CONTRACTOR's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the ARCHITECT, nor the issuance of a Notice of Substantial Completion/Notice of Completion, nor any payment by the DISTRICT to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by the DISTRICT, nor any act of acceptance by the DISTRICT nor any failure to do so, nor any review and approval of a Shop Drawing or sample submittal, will constitute an acceptance of work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents.

14.13 Waiver of Claims

- A. The acceptance by the CONTRACTOR of the final payment, shall be a release of the DISTRICT and its agents from all claims of liability to the CONTRACTOR for anything done or furnished for, or relating to, the WORK or for any act or neglect of the DISTRICT or of any person relating to or affecting the WORK, except demands made against the DISTRICT for the remainder, if any, of the amounts kept or retained and excepting all pending, unresolved claims filed prior to the date of the Notice of Substantial Completion/ Notice of Completion
- B. The making and acceptance of final payment shall constitute:
 1. A waiver of all claims by the DISTRICT against the CONTRACTOR, except claims arising from unsettled Liens, from defective WORK appearing after final inspection, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from the CONTRACTOR's continuing obligations under the Contract Documents; and
 2. A waiver of all claims by the CONTRACTOR against the DISTRICT other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Suspension of Work by the District

At any time and without cause, the DISTRICT may suspend the WORK or any portion thereof for a period of not more than ninety (90) days by notice in writing to the CONTRACTOR. The CONTRACTOR and the ARCHITECT which will fix the date on which Work will be resumed. The CONTRACTOR shall resume the WORK on receipt from the Project Representative of a Notice of Resumption of WORK. The CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Time, or both, directly attributable to any such suspension if the CONTRACTOR makes an approved claim therefore.

15.02 Termination of Agreement by the District (Contractor Default)

- A. In the event of default by the CONTRACTOR, the DISTRICT may give Seven (7) days written notice to the CONTRACTOR of the DISTRICT's intent to terminate the Agreement and provide the CONTRACTOR an opportunity to remedy the conditions constituting the default. It shall be considered a default by the CONTRACTOR upon the occurrence of one or more of the following events:
 1. CONTRACTOR becomes insolvent, or assigns its assets for the benefit of its creditors;

2. CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established, as adjusted from time to time.
 3. CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;
 4. CONTRACTOR disregards the authority of the ARCHITECT;
 5. CONTRACTOR substantially violates any provisions of the Contract Documents; or
 6. CONTRACTOR fails to prosecute the WORK according to approved construction schedule;
 7. CONTRACTOR fails to provide a qualified, full-time Superintendent or Project Manager at the site, competent workers, or materials or equipment meeting the requirements of the Contract Documents. If the CONTRACTOR fails to remedy the conditions constituting default within the time allowed, the DISTRICT may then issue the Notice of Termination.
- B. The DISTRICT may, after giving the CONTRACTOR (and the surety) Seven (7) days written notice and to the extent permitted by Laws and Regulations, terminate the services of the CONTRACTOR, exclude the CONTRACTOR from the site and take possession of the Work and of all of the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the CONTRACTOR (without liability to the CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which the DISTRICT has paid the CONTRACTOR but which are stored elsewhere, and finish the Work as the DISTRICT may deem expedient.
- C. In such case the CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by the DISTRICT arising out of or resulting from completing the Work such excess will be paid to the CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, the CONTRACTOR shall pay the difference to the DISTRICT. Such claims, costs, losses and damages incurred by the DISTRICT will be reviewed by the ARCHITECT and incorporated in a Change Order.
- D. Where the CONTRACTOR's services have been so terminated by the DISTRICT, the termination will not affect any rights or remedies of the DISTRICT against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due the CONTRACTOR by the DISTRICT will not release the CONTRACTOR from liability.

15.03 Termination of Agreement by the District (For Convenience)

Upon seven (7) days written notice to the CONTRACTOR, and the ARCHITECT, the DISTRICT may, without cause and without prejudice to any other right or remedy of the DISTRICT, elect to terminate the Agreement. In such case, the CONTRACTOR shall be paid (without duplication of any items) for the following:

1. Completed and acceptable Work executed in accordance with the procedure prescribed for the making of the final application for payment and payment. Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. All claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and
4. Reasonable expenses directly attributable to termination.

The CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 Termination of Agreement by the Contractor

The CONTRACTOR may terminate the Agreement upon fourteen (14) days written notice to the DISTRICT, whenever, through no act or fault of the CONTRACTOR, the Work is suspended for a period of more than ninety (90) consecutive days by the DISTRICT or under an order of court or other public authority, fails to act on any Application for Payment within thirty (30) days after it is submitted, or the DISTRICT fails for thirty (30) days to pay the CONTRACTOR any sum finally determined to be due, then the CONTRACTOR may, upon seven (7) days written notice to the DISTRICT and the ARCHITECT, terminate the Agreement and recover from the DISTRICT payment.

In lieu of terminating the Agreement and without prejudice to any other right or remedy, if the DISTRICT has failed for thirty (30) days to pay the CONTRACTOR any sum finally determined to be due, the CONTRACTOR may upon seven (7) days written notice to the DISTRICT and the ARCHITECT stop the Work until payment is made of all such amounts due to the CONTRACTOR.

These provisions are not intended to preclude the CONTRACTOR from making claim for an increase in Contract Price or Contract Time or otherwise for expenses or damage directly attributable to the CONTRACTOR's stopping Work as permitted.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Dispute Resolution

Any question about interpretation, clarification, or disagreement that has been timely referred to the ARCHITECT, except any which have been waived by the making or accepting of final payment, shall upon timely demand of either party be subject to resolution.

Pending resolution of the claim or dispute, the CONTRACTOR shall proceed diligently with the performance of the contract in accordance with the ARCHITECT's determination, unless the parties to this contract agree otherwise in writing. All claims and disputes shall be resolved pursuant to Section 18.17 and 18.18 of these General Conditions

ARTICLE 17 MISCELLANEOUS

17.01 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Title to Materials Found on the Work

The DISTRICT shall have the right to retain title to all soils, stone, sand, gravel, and other materials developed and obtained from excavations and other operations connected with the WORK. Unless otherwise specified in the Contract Documents, neither the CONTRACTOR nor any subcontractor shall have any right, title, or interest in or to any such materials. The CONTRACTOR will be permitted to use in the WORK, without charge, any such materials which meet the requirements of the Contract Documents.

17.03 Computation of Time

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.04 Right to Audit

If the CONTRACTOR submits a claim to the DISTRICT for additional compensation, the DISTRICT shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR's books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which the claim has been submitted.

The right to audit shall include the right to inspect the CONTRACTOR's plants, or such parts thereof, as may have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the DISTRICT deems desirable during the CONTRACTOR's normal business hours at the office of the CONTRACTOR. The CONTRACTOR shall make available to the DISTRICT for auditing, all relevant accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the DISTRICT.

17.05 Notice of Claim

Should DISTRICT or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this Article shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.06 Cumulative Remedies

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR and all of the rights and remedies available to DISTRICT and ARCHITECT there under, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents. The provisions of this Article will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

17.07 Professional Fees and Court Costs Included

Whenever reference is made to "claims, costs, losses and damages," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

17.08 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

ARTICLE 18 - CALIFORNIA STATE REQUIREMENTS

18.01 State Wage Determinations

- A. As required by Sections 1770 and following, of the California Labor Code, the CONTRACTOR shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the office of the DISTRICT, which copies shall be made available to any interested party on request. The CONTRACTOR shall post a copy of such determination at each job site.
- B. The CONTRACTOR shall, as a penalty to the DISTRICT, forfeit Two-Hundred (\$200.) Dollars for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director for such Work or craft in which such worker is employed for any public work done under the contract or by any subcontractor.

18.02 Workers' Compensation

- A. In accordance with the provisions of Section 3700 of the California Labor Code, the CONTRACTOR shall secure the payment of compensation to its employees.
- B. Prior to beginning work under the Contract, the CONTRACTOR shall sign and file with the DISTRICT the following certification:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the WORK of this Contract."

- C. Notwithstanding the foregoing provisions, before the Contract is executed on behalf of the DISTRICT, a bidder to whom a contract has been awarded shall furnish satisfactory evidence that it has secured in the manner required and provided by law the payment of workers' compensation.

18.03 Apprentices on Public Works

The CONTRACTOR shall comply with all applicable provisions of Section 1777.5 and 1777.6 of the California Labor Code relating to employment of apprentices on public works.

18.04 Working Hours

The CONTRACTOR shall comply with all applicable provisions of Section 1810 to 1815, inclusive, of the California Labor Code relating to working hours. The CONTRACTOR shall, as a penalty to the DISTRICT, forfeit Twenty-Five (\$25.) Dollars for each worker employed in the execution of the Contract by the CONTRACTOR or by any sub-contractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, unless such work receives compensation for all excess hours in accordance with Labor Code Section 1815.

18.05 Acts of God

CONTRACTOR shall not be responsible for the cost of repairing or restoring damage to the WORK which damage is determined to have been proximately caused by an act of God, in excess of five (5%) percent of the contracted amount, provided, that the WORK damaged was built in accordance with accepted and applicable building standards and the plans and specifications of the DISTRICT. The CONTRACTOR shall obtain insurance to indemnify the DISTRICT for any damage to the WORK caused by an act of God if the insurance premium is a separate bid item in the bid schedule for the WORK. For purposes of this section, the term "acts of God" shall include only the following occurrences or conditions and effects: earthquakes in excess of a magnitude of 3.5 on the Richter scale, and tidal waves.

18.06 Notice of Completion

In accordance with Sections 8180-8190 of the California Civil Code, within ten (10) days after date of acceptance of the WORK by the DISTRICT's governing body, the DISTRICT will file, in the County Recorder's office, a Notice of Completion of the WORK.

18.07 Unpaid Claims

If, at any time prior to the expiration of the period for service of a Stop Notice, there is served upon the DISTRICT a Stop Notice as provided in Sections 8830-8848 of the Civil Code of the State of California, the DISTRICT shall, until the discharge thereof, withhold from the moneys under its control so much of said moneys due or to become due the CONTRACTOR under this Contract as shall be sufficient to answer the claim stated in such Stop Notice and to provide for the reasonable cost of any litigation there under; provided, that if the ARCHITECT shall, in its discretion, permit the CONTRACTOR to file with the DISTRICT the bond referred to in Section 3196 of the Civil Code of the State of California, said moneys shall not thereafter be withheld on account of such Stop Notice.

18.08 Retainage from Monthly Payments

Pursuant to Section 22300 of the California Public Contract Code, the CONTRACTOR may substitute securities for any money withheld by the DISTRICT to ensur:

Performance under the Agreement. At the request and expense of the CONTRACTOR, securities equivalent to the amount withheld shall be deposited with the DISTRICT or with a state or federally chartered bank in California as the escrow agent, who shall return such securities to the CONTRACTOR upon satisfactory completion of the Work. Alternatively, the CONTRACTOR may request and the DISTRICT shall make payment of retentions earned directly to the escrow agent at the expense of the CONTRACTOR. At the expense of the CONTRACTOR, the CONTRACTOR may direct the investment of the payments into securities and the CONTRACTOR shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the CONTRACTOR.

Upon satisfactory completion of the Work, the CONTRACTOR shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the DISTRICT, pursuant to the terms of this section. If CONTRACTOR elects to receive interest on moneys withheld in retention by DISTRICT, CONTRACTOR shall, at the request of any Subcontractor performing more than five percent (5%) of CONTRACTOR's total Bid, make that option available to the Subcontractor regarding any moneys withheld in retention by CONTRACTOR from the Subcontractor. The Subcontractor shall receive the identical rate of interest received by CONTRACTOR from DISTRICT on any retention moneys withheld from the Subcontractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the Subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the Subcontractor. If CONTRACTOR elects to substitute securities in lieu of retention, then, by mutual consent of CONTRACTOR and the Subcontractor, the Subcontractor may substitute securities in exchange for the release of moneys held in retention by CONTRACTOR. Deposit of securities with an escrow agent shall be subject to a written agreement between the escrow agent, CONTRACTOR and the DISTRICT which is substantially similar to the form provided in California Public Contract Code Section 22300. The DISTRICT will not certify that the Work has been satisfactorily completed until at least thirty (30) days after filing by the DISTRICT of a Notice of Completion. Securities eligible for investment under Section 22300 shall be limited to those listed in Section 16430 of the Government Code and to bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the CONTRACTOR and DISTRICT.

18.09 Public Works Contracts; Assignment to Awarding Body

The CONTRACTOR and Subcontractors shall conform to the following requirements. In entering into a contract or a subcontract to supply goods, services, or materials pursuant to an agreement, i.e. contract with the DISTRICT, the CONTRACTOR or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the CONTRACTOR, without further acknowledgement by the parties.

18.10 Submittal of Bids; Agreement to Assign

In accordance with Section 4552 of the Government Code, the bidder shall conform to the following requirements. In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 Division 7 of the Business and Professions Code) arising from purchases of goods, materials, or services by and for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

18.11 Payroll Records

- A. Each contractor and subcontractor shall keep an accurate payroll record in accordance with Section 1776 of the California Labor Code, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work.
- B. The payroll records enumerated above shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:

1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
 2. A certified copy of all payroll records shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.
 3. A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to subparagraph 2 above, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.
- C. Each contractor shall file a certified copy of the records with the entity that requested the records within 10 days after receipt of a written request.
- D. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the CONTRACTOR awarded the contract or performing the contract shall not be marked or obliterated.
- E. The CONTRACTOR shall inform the body awarding the contract of the location of the records enumerated under paragraph 18.12a, herein, including the street address, city and county, and shall, within five (5) working days, provide a notice of a change of location and address.
- F. In the event of noncompliance with the requirements of this Section, the CONTRACTOR shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects the CONTRACTOR must comply with this Section. Should noncompliance still be evident after the ten (10) day period, the CONTRACTOR shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five (\$25.) Dollars for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.
- G. A copy of all payrolls shall be submitted weekly to the District's General Manager/Superintendent. Payrolls shall contain the full name, address and social security number of each employee, his or her correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. They shall also indicate apprentices and ratio of apprentices to journeymen. The employee's address and social security number need only appear on the first payroll on which his name appears. The payroll shall be accompanied by a "Statement of Compliance" signed by the employer or its agent indicating that the payrolls are correct and complete and that the wage rates contained therein are not less than those required by the contract. The "Statement of Compliance" shall be on forms furnished by the DISTRICT or on any form with identical wording. The CONTRACTOR shall be responsible for the submission of copies of payrolls of all subcontractors.

- H. If by the fifteenth (15th) of the month, the CONTRACTOR has not submitted satisfactory payrolls for all work performed during the monthly period ending on or before the first (1st) of that month, the DISTRICT will retain an amount equal to ten (10) percent of the estimated value of the work performed during the month from the next monthly estimate, except that such retention shall not exceed Ten-Thousand (\$10,000.) Dollars nor be less than One-Thousand (\$1,000.) Dollars. Retentions for failure to submit satisfactory payrolls shall be additional to all other retentions provided for in the Agreement. The retention for failure to submit payrolls for any monthly period will be released for payment on the monthly estimate for partial payments next following the date that all the satisfactory payrolls for which the retention was made are submitted.

18.12 Cultural Resources

The CONTRACTOR's attention is directed to the provisions of the Clean Water Grant Program Bulletin 76A which augments the National Historic Preservation Act of 1966 (16 U.S.C. 470) as specified under Section 01560 entitled, "Temporary Environmental Controls" of the General Requirements.

18.13 Removal, Relocation, or Protection of Existing Utilities

- A. In accordance with the provisions of Section 4215 of the California Government Code, any contract to which a public agency as defined in Section 4401 is a party, the public agency shall assume the responsibility, between the parties to the contract, for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the site of any construction project that is a subject of the contract, if such utilities are not identified by the public agency in the plans and specifications made a part of the invitation for bids. The agency will compensate the CONTRACTOR for the costs of locating, repairing damage not due to the failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy and for equipment on the project necessarily idled during such work.
- B. CONTRACTOR shall not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of the public agency or the owner of the utility to provide for removal or relocation of such utility facilities.
- C. Nothing herein shall be deemed to require the public agency to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the site of the construction project can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction; provided, however, nothing herein shall relieve the public agency from identifying main or trunk lines in the plans and specifications.
- D. If the CONTRACTOR while performing the contract discovers utility facilities not identified by the public agency in the contract plans or specifications, he or she shall immediately notify the public agency and utility in writing.
- E. The public utility, where they are the owner, shall have the sole discretion to perform repairs or relocation work or permit the CONTRACTOR to do such repairs or relocation work at a reasonable price.

18.14 Timely Progress Payments, Interest and Payment Requests

- A. If the DISTRICT fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted payment request from the CONTRACTOR, the DISTRICT shall pay interest to the CONTRACTOR equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

- B. Upon receipt of a payment request, the DISTRICT shall act in accordance with both of the following:
 - 1. Each payment request shall be reviewed by the DISTRICT as soon as practicable after receipt for the purpose of determining that the payment request is a proper payment request.
 - 2. Any payment request determined not to be a proper payment request suitable for payment shall be returned to the CONTRACTOR as soon as practicable, but not later than seven (7) days, after receipt. A request returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the payment request is not proper.
- C. The number of days available to the DISTRICT to make a payment without incurring interest pursuant to this paragraph shall be reduced by the number of days by which the DISTRICT exceeds the seven-day requirement set forth above.
- D. For purposes of this paragraph:
 - 1. A "progress payment" includes all payments due the CONTRACTOR, except that portion of the final payment designated by the contract as retention earnings.
 - 2. A payment request shall be considered properly executed if funds are available for payment of the payment request, and payment is not delayed due to an audit inquiry by the financial officer of the DISTRICT.

18.15 Digging Trenches or Other Excavations

- A. CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the DISTRICT, in writing of any: (1) material that CONTRACTOR believes may be material and is hazardous waste, as defined in section 25117 of the Health and Safety Code, and 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; or (3) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent Work of the character provided for in the Contract Documents.
- B. The DISTRICT shall promptly investigate the conditions, and if the DISTRICT finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR's cost of, or the time required for, performance of any part of the Work shall issue a change order under the procedures described in the Contract Documents.
- C. In the event that a dispute arises between the DISTRICT and the CONTRACTOR whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR's cost of, or time required for, performance of any part of the Work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the Contract Documents, but shall proceed with all Work to be performed under the Contract Documents. CONTRACTOR shall retain any and all rights provided either by the Contract Documents or by law which pertain to the resolution of disputes and protests between the DISTRICT and CONTRACTOR.

18.16 Retention Proceeds, Withholding, and Disbursement

In accordance with Section 7107 of the Public Contract Code, the following shall apply:

- A. The retention proceeds withheld from any payment by the DISTRICT from the original CONTRACTOR, or by the original CONTRACTOR from any Subcontractor, shall be subject to this paragraph 18.16.
- B. Within 60 days after the date of completion of the Work, the retention withheld by the DISTRICT shall be released. In the event of a dispute between the DISTRICT and the CONTRACTOR, the DISTRICT may withhold from the final payment an amount not to exceed one hundred fifty percent (150%) of the disputed amount. For the purposes of this paragraph, "completion" means any of the following:
 - 1. The occupation, beneficial use, and enjoyment of a work of improvement, excluding any operation only for testing, startup, or commissioning, by the DISTRICT, accompanied by cessation of labor on the Work.
 - 2. The acceptance by the DISTRICT of the work of improvement.
 - 3. After the commencement of the Work, a cessation of labor on the Work for a continuous period of one hundred (100) days or more, due to factors beyond the control of the CONTRACTOR.
 - 4. After the commencement of the Work, a cessation of labor on the Work for a continuous period of thirty (30) days or more, if the DISTRICT files for record a notice of cessation or a notice of completion.
- C. Subject to subparagraph (d) below, within seven (7) days from the time that all or any portion of the retention proceeds are received by the CONTRACTOR, the CONTRACTOR shall pay each of its Subcontractors from whom retention has been withheld, each Subcontractor's share of the retention received. However, if a retention payment received by the CONTRACTOR is specifically designated for a particular Subcontractor, payment of the retention shall be made to the designated Subcontractor, if the payment is consistent with the terms of the subcontract.
- D. The CONTRACTOR may withhold from a Subcontractor its portion of the retention proceeds if a bona fide dispute exists between the Subcontractor and the CONTRACTOR. The amount withheld from the retention payment shall not exceed one hundred fifty percent (150%) of the estimated value of the disputed amount.
- E. In the event that retention payments are not made within the time periods required by this paragraph 18.16, the DISTRICT or CONTRACTOR withholding the unpaid amount shall be subject to a charge of two percent (2%) per month on the improperly withheld amount, in lieu of any interest otherwise due. Additionally, in any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to attorney's fees and costs.

18.17 Claims Procedures

- A. These claims and dispute resolution procedures are based on and intended to comply with the requirements of Public Contract Code sections 9204 and 20104 and other applicable laws and regulations. In the event of a conflict between these claims and dispute resolution procedures and applicable law, the provisions of Public Contract Code sections 9204 and 20104 and any other applicable law shall control in all respects.

- B. Claim means a separate demand by the CONTRACTOR for one or more of the following: (1) a time extension including, without limitation, for relief from damages or penalties for delay assessed by the DISTRICT; (2) payment by the DISTRICT of money or damages arising from the Work performed by, or on behalf of, the CONTRACTOR pursuant to the Agreement and payment for which payment is not otherwise expressly provided or to which the CONTRACTOR is not otherwise entitled; or (3) payment of an amount that is disputed by the DISTRICT.
- C. Claim Form. A Claim shall include the following:
1. A statement that it is a Claim and a request for a decision.
 2. A detailed description of the act, error, omission, unforeseen condition, event or other condition giving rise to the Claim.
 3. If the Claim is subject to the Change Order procedures, a statement demonstrating that a Change Order Request was timely submitted and denied.
 4. A detailed justification for any remedy or relief sought by the Claim, including to the extent applicable, the following:
 - a) If the Claim involves extra work, a detailed cost breakdown claimed. The breakdown shall be provided even if the costs claimed have not been incurred when the Claim is submitted.
 - b) To the extent costs have been incurred when the Claim is submitted, the Claim shall include actual cost records (including, without limitation, payroll records, material and rental invoices) demonstrating that costs claimed have actually been incurred.
 - c) To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records shall be submitted on a current basis not less than once a week during any periods costs are incurred. A cost record will be considered current if submitted within seven (7) days of the date the cost reflected in the record is incurred. At the DISTRICT's request, claimed extra costs may be subject to further verifications procedures (such as having an inspector verify the performance of alleged extra work on a daily basis).
 5. If the Claim involves an error or omission in the Contract Documents:
 - a) An affirmative representation that the error or omission was not discovered before submitting a bid for the Work; and
 - b) A detailed statement demonstrating that the error or omission reasonably should not have been discovered by the CONTRACTOR, its Subcontractors and suppliers, before submitting a bid for the Contract.
 6. If the Claim involves an extension of the Contract Time, written documentation demonstrating the CONTRACTOR's entitlement to a time extension.
 7. If the Claim involves an adjustment of the Contract Sum for delay, written documentation demonstrating the CONTRACTOR's entitlement to such an adjustment.

8. A personal certification from the CONTRACTOR that reads as follows:

"I, _____, BEING THE _____ (MUST BE AN OFFICER) OF (GENERAL CONTRACTOR), DECLARE UNDER PENALTY OF PERJURY UNDER CALIFORNIA LAW, AND DO PERSONALLY CERTIFY AND ATTEST THAT I HAVE THOROUGHLY REVIEWED THE ATTACHED CLAIM FOR ADDITIONAL COMPENSATION AND/OR EXTENSION OF TIME, AND KNOW ITS CONTENTS, AND SAID CLAIM IS MADE IN GOOD FAITH; THE SUPPORTING DATA IS TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE CONTRACTOR BELIEVES THE DISTRICT IS LIABLE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE § 72 AND CALIFORNIA GOVERNMENT CODE § 12650, ET SEQ., PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMITTING OR CERTIFYING A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT, AND/OR OTHER SEVERE LEGAL CONSEQUENCES."

- D. Regardless of any Claim submittal, or any dispute regarding a Claim, unless otherwise directed by the DISTRICT, the CONTRACTOR shall not cause any delay, cessation, or termination of the Work, but will diligently proceed with the performing the Work in accordance with the Contract Documents. Except as otherwise provided, the DISTRICT will continue to make payments in accordance with the Contract Documents.
- E. The CONTRACTOR understands and agrees that submitting a Claim in accordance with the Contract Documents is an express condition precedent to the CONTRACTOR's right to otherwise pursue a Claim whether through alternative dispute resolution or by litigation. Should the Contractor fail to submit a Claim in accordance with the Contract Documents, including the time limits set forth herein, it will waive any right to a remedy, whether in law or equity, it might otherwise have pursuant to the Contract Documents or applicable law.
- F. The DISTRICT and CONTRACTOR shall comply with the following Claim procedures:
 - 1. The Claim must be in writing and include the documents necessary to substantiate the Claim. Claims must be filed on or before the day of final payment. Nothing in this subsection is intended to extend the time limit or supersede notice requirements for the filing of Claims as set forth elsewhere in the Contract Documents.
 - 2. Claims Less than or Equal to Fifty Thousand Dollars (\$50,000)
 - a). For Claims of less than or equal to Fifty Thousand Dollars (\$50,000), the DISTRICT shall respond in writing to any Claim within forty-five (45) days of receipt of the Claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the Claim or relating to defenses or claims the DISTRICT may have against the CONTRACTOR.
 - b) If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the DISTRICT and the CONTRACTOR.
 - c) The DISTRICT's written response to the Claim, as further documented, shall be submitted to the CONTRACTOR within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the CONTRACTOR in producing the additional information, whichever is greater.

- d) The DISTRICT's written response to the CONTRACTOR identifying what portion of the Claim is disputed and what portion is undisputed within shall be submitted within (45) days of receipt of the Claim, unless the parties mutually agree to extend the time for response. If the DISTRICT does not respond within the 45-day time period, or as extended by mutual agreement, the Claim shall be deemed rejected in its entirety.

If the DISTRICT needs approval from the DISTRICT's Board of Directors to provide the CONTRACTOR with a written statement identifying which portion of the Claim is disputed and which portion is undisputed, and the Board of Directors does not meet within forty five (45) days or a mutually agreed upon extension following receipt of the Claim, the District shall have up to three (3) days following the next duly noticed public meeting of its Board of Directors after the forty five (45) day period, or extension, to provide the CONTRACTOR with a written statement identifying which portion of the Claim is disputed and which portion is undisputed.

- e) Payment of any undisputed portion of the Claim shall be processed and made within sixty (60) days after the DISTRICT issues its written response to the Claim. If the DISTRICT fails to issue a timely statement, Section 18.18 below, shall apply.

3. Claims over Fifty Thousand (\$50,000) Dollars.

- a) For Claims of over Fifty Thousand (\$50,000) Dollars, the DISTRICT shall respond in writing to any Claim within sixty (60) days of receipt of the Claim, or may request, in writing, within thirty (30) days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses or claims the DISTRICT may have against the CONTRACTOR.
- b) If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the DISTRICT and the CONTRACTOR.
- c) The DISTRICT's written response to the Claim, as further documented, shall be submitted to the CONTRACTOR within thirty (30) days after receipt of the further documentation or within a period of time no greater than that taken by the CONTRACTOR in producing the additional information, whichever is greater.
- d) The DISTRICT's written response to the CONTRACTOR identifying what portion of the Claim is disputed and what portion is undisputed shall be submitted within (45) days of receipt of the Claim, unless the parties mutually agree to extend the time for response. If the DISTRICT does not respond within the 45-day time period, or as extended by mutual agreement, the Claim shall be deemed rejected in its entirety.

If the District needs approval from the DISTRICT's Board of Directors to provide the CONTRACTOR with a written statement identifying which portion of the Claim is disputed and which portion is undisputed, and the Board of Directors does not meet within forty five (45) days or a mutually agreed upon extension following receipt of the Claim, the DISTRICT shall have up to three (3) days following the next duly noticed public meeting of its Board of Directors after the forty five (45) day period, or extension, to provide the CONTRACTOR with a written response identifying which portion of the Claim is disputed and which portion is undisputed.

- e) Payment of any undisputed portion of the Claim shall be processed and made within sixty (60) days after the DISTRICT issues its written response. If the DISTRICT fails to issue a timely statement, Section 18.18, below, shall apply.

The DISTRICT and CONTRACTOR shall comply with the following dispute resolution procedures:

- A. If the CONTRACTOR disputes the DISTRICT's written response to a Claim, or the DISTRICT fails to respond within the time prescribed, the CONTRACTOR may so notify the DISTRICT, in writing, either within fifteen (15) days of receipt of the DISTRICT's response or within fifteen (15) days of the DISTRICT's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. The Upon receipt of such a demand, the DISTRICT shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.
- B. Within ten (10) business days following the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the DISTRICT shall provide the CONTRACTOR with a written statement of the portion of the Claim that remains disputed and the portion of the Claim which remains undisputed. Payment of any undisputed portion of the Claim shall be processed and made within sixty (60) days after the DISTRICT issues its written statement. Any remaining disputed portion of the Claim, as identified by the CONTRACTOR in writing, shall be submitted to nonbinding mediation with the DISTRICT and the CONTRACTOR each sharing the associated costs equally. The DISTRICT and the CONTRACTOR shall mutually agree to a mediator within ten (10) business days after the remaining disputed portion of the Claim is identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator, and the two (2) mediators shall select a qualified 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 a neutral mediator. If the mediation is unsuccessful, the remaining disputed portion of the Claim shall be subject to the procedures specified in section 18.18.e, below, if applicable.
- C. For purposes of this section, mediation includes any nonbinding process including, but not limited to, neutral evaluation or dispute resolution board, in which an independent third party or board assists the parties in dispute resolution through negotiation or issuance of an evaluation.
- D. Unless otherwise mutually agreed upon by the parties in writing, the mediation shall excuse further obligation under Public Contract Code section 20104.4 to mediate after litigation has commenced.
- E. If following the meet and confer conference the Claim or any portion remains in dispute, the Contractor may file a Claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the California Government Code. For purposes of those provisions, the running of the period of time within which a Claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer conference.
- F. This section does not apply to tort claims and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.
- G. Failure of the DISTRICT to respond to a Claim by the CONTRACTOR within the time periods or time requirements specified in this section shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the DISTRICT's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with respect to the merits of the Claim or the responsibility or qualifications of the CONTRACTOR.

- H. Amounts not timely paid by the DISTRICT in a timely manner as required by this section shall bear interest at 7 percent per annum.
- I. If a Subcontractor lacks legal standing to assert a Claim against the DISTRICT because privity of contract does not exist, the CONTRACTOR may present a Claim to the DISTRICT on behalf of the Subcontractor. A Subcontractor may request in writing either on its behalf, or on behalf of a lower tier Subcontractor, that the CONTRACTOR present a Claim for work that was performed by the Subcontractor or lower tier Subcontractor. The Subcontractor requesting the Claim be presented to the DISTRICT shall furnish reasonable documentation to support the Claim. Within 45 days after the receipt of such a request, the CONTRACTOR shall notify the Subcontractor in writing whether the CONTRACTOR presented the Claim to the DISTRICT and if the CONTRACTOR did not present the Claim to the DISTRICT, provide the Subcontractor the reason for not submitting the Claim.

18.19 Procedures for Civil Action

The following procedures will apply to all civil actions filed to resolve Claims against the DISTRICT by the CONTRACTOR, which do not exceed Three Hundred Seventy-Five Thousand Dollars (\$375,000.00) for: (1) a time extension, (2) payment of money or damages arising from Work done by, or on behalf of, the CONTRACTOR pursuant to the Contract Documents and payment of which is not otherwise expressly provided for or the Contractor is not otherwise entitled to, or (3) an amount the payment of which is disputed by the DISTRICT:

- A. Within sixty (60) days, but no earlier than thirty (30) days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the fifteen (15) day period, any party may petition the court to appoint the mediator.
- B. Arbitration.
 - 1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the California Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subsection consistent with the rules pertaining to judicial arbitration.
 - 2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this section shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.
 - 3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees of the other party arising out of the trial de novo.

- C. The District shall pay money as to any portion of a Claim subject to this section 18.19 which is undisputed except as otherwise provided in the Contract Documents.
- D. In any suit filed under this section 18.19, the District shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

18.20 Waiver of Jury Trial

BY EXECUTING THE CONTRACT, THE CONTRACTOR AGREES TO HAVE DISPUTES OR CONTROVERSY CONCERNING THE CONSTRUCTION, INTERPRETATION, PERFORMANCE, OR BREACH OF THESE CONTRACT DOCUMENTS, INCLUDING CLAIMS FOR BREACH OF CONTRACT OR ISSUES OF BAD FAITH DECIDED IN ACCORDANCE WITH THIS ARTICLE 18. BOTH THE DISTRICT AND THE CONTRACTOR WAIVE THEIR RIGHT TO A JURY TRIAL FOR THESE DISPUTES OR ISSUES.

18.21 Miscellaneous Certifications

By submitting a Bid, CONTRACTOR certified as follows:

- A. DIR Registration. CONTRACTOR is registered with the Department of Industrial Relations (DIR) and will take all measures necessary to keep such registration current throughout the duration of the Work.
- B. Drug Free Workplace.
 - 1. Contractor is aware of the provisions and requirements of California Government Code §§ 8350 et seq., the Drug Free Workplace Act of 1990.
 - 2. Contractor is authorized to certify, and does certify, that a drug free workplace will be provided by doing all of the following: (a) Publishing a statement notifying all employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in Contractor's workplace and specifying actions which will be taken against employees for a violation of the prohibition; (b) Establishing a drug-free awareness program to inform employees about all of the following: (i) The dangers of drug abuse in the workplace; (ii) Contractor's policy of maintaining a drug-free workplace; (iii) The availability of drug counseling, rehabilitation and employee-assistance programs; and (iv) The penalties that may be imposed upon employees for drug abuse violations; (c) Requiring that each employee engaged in the performance of Work on the Project be given a copy of the statement required by subdivision (a), above, and that as a condition of employment by Contractor in connection with the Work on the Project, the employee agrees to abide by the terms of the statement.
 - 3. Contractor understands that if the District determines that Contractor has either: (a) made a false certification herein, or (b) violated this certification by failing to carry out and to implement the requirements of Government Code §§ 8350 et seq., the Contract is subject to termination, suspension of payments, or both. Contractor further understands that, should Contractor violate the terms of the Drug-Free Workplace Act of 1990, Contractor may be subject to debarment in accordance with the provisions of Government Code §§ 8350, et seq.

- C. Iran Contracting. If the amount of the Contract payable to the CONTRACTOR for the Project exceeds \$1,000,000, then the CONTRACTOR certifies that it is not (a) identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, or (b) a financial institution that extends, for forty-five (45) days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04**

NEW ADMINISTRATION BUILDING

PROJECT MANUAL

PART II - CONDITIONS OF THE CONTRACT

**General Conditions
Supplementary General Conditions**

SUPPLEMENTARY GENERAL CONDITIONS

TABLE OF CONTENTS

ARTICLE 1 – GENERAL

ARTICLE 2 – SITE CHARACTERISTICS

- 2.01 Prosecution of Work
- 2.02 Environmental Considerations
- 2.03 Survey of Existing Conditions

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**GOLETA WEST SANITARY DISTRICT
HEADQUARTERS, BUILDING UPGRADES
PROJECT NO. 13-04
NEW ADMINISTRATION BUILDING**

PART II - CONDITIONS OF THE CONTRACT

SUPPLEMENTARY GENERAL CONDITIONS

ARTICLE 1 - GENERAL

These Supplementary General Conditions make additions, deletions, or revisions to the General Conditions, as indicated herein. All provisions which are not so added, deleted, or revised remain in full force and effect. Terms used in these Supplementary General Conditions which are defined in the General Conditions have the same meanings assigned to them in the General Conditions.

ARTICLE 2 - SITE CHARACTERISTICS

2.01 PROSECUTION OF WORK

- A. The Project Site is the Headquarters of the Goleta West Sanitary District and must remain operational and unencumbered, throughout the course of Demolition and Construction.
- B. The Scope of Work encompasses pursuit of Leadership in Energy and Environmental Design (LEED) Certification.

2.02 ENVIROMENTAL CONSIDERATIONS

- A. The Headquarters of the Goleta West Sanitary District is located immediately adjacent to the Goleta Slough, designated an environmentally sensitive wetland.
- B. Contractor shall comply with all applicable regulatory and environmental protection requirements, enforced by Agencies Having Jurisdiction.
- C. CONTRACTOR shall assume full responsibility for any infringement, impact, or damage e to any portion of the adjacent wetlands.
- D. CONTRACTOR shall be responsible for Sustainable Construction credits assigned as a part of the LEED Certification submittal.

2.03 SURVEY OF EXISTING CONDITIONS

- A. A Site Survey was prepared, at the request of the District, and is provided for reference purposes within the bound set of Construction Drawings. Location and information relative to below grade utilities and services within, or contiguous to, the site has been incorporated into the Survey. Those elements that have been abandoned are identified, as such. The District does not assume responsibility for the accuracy or completeness of information provided within this Survey.
- B. These services and utilities are critical to the functioning of the facility and cannot be disrupted. The Contractor shall be responsible for protecting these below grade utilities and services throughout the course of demolition and construction work.
- C. The Contractor shall notify the District, no less than Twenty-four (24) hours in advance of commencing any work that may impact these, below grade, utilities, and services. The Contractor shall coordinate with the District and confirm that a utility or service is abandoned, or may be relocated, prior to commencing work. The Contractor shall immediately repair and/or replace any service or utility that is damaged or disrupted in executing the work, at no cost to the District.

END OF SUPPLEMENTARY CONDITIONS



Your environmental partner since 1954

GOLETA WEST SANITARY DISTRICT

PROJECT MANUAL

HEADQUARTERS, BUILDING UPGRADES

PROJECT NO. 13-04

PART III – TECHNICAL SPECIFICATIONS

NEW ADMINISTRATION BUILDING

2023



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GOLETA WEST SANITARY DISTRICT

HEADQUARTERS, BUILDING UPGRADES

PROJECT NO. 13-04

NEW ADMINISTRATION BUILDING

PROJECT MANUAL

PART III - TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 01	GENERAL REQUIREMENTS
01 11 00	Summary of Work
01 20 00	Price and Payment Procedures
01 31 19	Project Meetings
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 42 00	References
01 45 00	Quality Control
01 50 00	Temporary Facilities and Controls
01 57 00	Temporary Environmental Controls
01 58 00	Project Identification
01 60 00	Products, Materials, and Equipment
01 71 13	Mobilization
01 71 33	Protection of Adjacent Construction
01 73 29	Cutting and Patching
01 77 00	Closeout Procedures
01 81 13	Sustainable Design Requirements
DIVISION 02	EXISTING CONDITIONS
02 42 13	Deconstruction of Structures
DIVISION 03	CONCRETE
03 30 00	Cast-In-Place Concrete
DIVISION 04	MASONRY
04 22 00	Concrete Unit Masonry
DIVISION 05	METALS
05 12 00	Structural Steel Framing
05 40 00	Cold Formed Metal Framing
05 50 00	Metal Fabrications
DIVISION 06	WOOD, PLASTICS, COMPOSITES
06 10 00	Rough Carpentry

DIVISION 07	THERMAL AND MOISTURE PROTECTION
07 21 00	Insulation
07 42 13	Metal Wall Panels
07 54 23	Thermoplastic-Polyolefin, Roofing
07 62 00	Sheet Metal Flashing and Trim
07 64 13	Horizontal Standing Seam Zinc Wall Panels
07 72 00	Roof Accessories
07 92 00	Joint Sealants
DIVISION 08	OPENINGS
08 11 00	Metal Doors and Frames
08 14 16	Flush Wood Doors
08 31 16	Access Panels
08 32 13	Sliding Aluminum-Framed Glass Doors
08 41 13	Aluminum - Framed Entrances and Storefronts
08 51 13	Aluminum Windows
08 62 23	Tubular Skylights
08 71 00	Hardware
08 80 00	Glazing
08 84 00	Plastic Glazing
DIVISION 09	FINISHES
09 21 16	Gypsum Board Assemblies
09 30 00	Tiling
09 51 23	Acoustical Tile Ceilings
09 54 26	Suspended Linear Wood Ceilings
09 65 13	Resilient Base
09 68 13	Tile Carpeting
09 91 00	Painting
DIVISION 10	SPECIALTIES
10 14 00	Signage
10 28 13	Toilet Accessories
10 44 16	Fire Extinguishers
DIVISION 11	EQUIPMENT
11 30 13	Kitchen Appliances
11 52 00	Audio Visual Equipment
DIVISION 12	FURNISHINGS
12 32 00	Casework and Countertops
12 93 00	Site Furnishings
DIVISION 13	SPECIAL CONSTRUCTION
13 12 13	Exterior Water Feature
DIVISION 21	FIRE SUPPRESSION
21 10 00	Water Based Fire-Suppression System

DIVISION 22	PLUMBING
22 05 23	General Duty Valves for Plumbing Piping
22 05 29	Hangers and Supports for Plumbing Piping and Equipment
22 05 48	Vibration and Seismic Controls for Plumbing Piping and Equipment
22 07 00	Plumbing Insulation
22 11 16	Domestic Water Piping
22 11 19	Domestic Water Piping Specialties
22 13 16	Sanitary Waste Vent Piping
22 13 19	Sanitary Waste Piping Specialties
22 14 13	Facility Storm Drainage Piping
22 33 00	Electric, Domestic -Water Heater
DIVISION 23	HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)
23 05 29	Hangers and Supports for HVAC Piping and Equipment
23 05 48	Vibration and Seismic Controls for HVAC Piping and Equipment
23 05 93	Testing, Adjusting and Balancing for HVAC
23 07 00	HVAC Insulation
23 31 00	HVAC Ducts and Casings
23 37 13	Diffusers, Registers, and Grilles
DIVISION 26	ELECTRICAL
26 05 19	Low -Voltage Electrical Power Connectors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	Hangers and Supports for Electrical Systems
26 05 33	Raceways and Boxes for Electrical Systems
26 05 44	Sleeves and Sleeve Seals for Electrical Raceways and Cabling
26 09 23	Lighting Control Devices
26 22 00	Low -Voltage Transformers
26 24 13	Switchboards
26 24 16	Panelboards
26 27 13	Electricity Metering
26 27 26	Wiring Devices
26 28 13	Fuses
26 28 16	Enclosed Switches and Circuit Breakers
26 29 13	Manual and Magnetic Motor Controllers
26 33 45	Electric Vehicle Charging Station
DIVISION 48	ELECTRICAL POWER GENERATION
48 14 00	Solar Energy Electrical Power Generation

END TABLE OF CONTENTS

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PART 1 GENERAL

1.01 General

- A. Furnish all labor, materials, equipment, incidentals, and services, including utilities, transportation and temporary facilities required and installation of all components necessary for a complete and operational new Administration Building, as drawn and specified in the Contract Documents. Identified as:

Goleta West Sanitary District
Headquarters, Building Upgrades
Project No. 13-04
NEW ADMINISTRATION BUILDING

- B. The primary focus of the WORK is construction of a 3,298 SF, single-level, on-grade, structure to house Administrative Offices, Public Lobby, Service Counter, Board Room, and support spaces.
- C. Site Work includes deconstruction of 1,170 SF of single level, wood and masonry structures, concrete slabs, foundations, subgrade utilities and infrastructure.

1.02 Supplemental

- A. Access to the Public Lobby and separate, exterior access to the Board Room provided under a shaded colonnade extending from the south face of the building.
- B. A 1,520 SF landscaped Courtyard, bounded on the north by the colonnade, on the east and south by a concrete Perimeter Flood Wall.
- C. Two water features, in the Courtyard, which will bookend three raised landscape planters, separated with bench seating.
- D. Landscaping west of the New Administration Building; a large area at the north end of Site, and a raised planter at the east face of the new Administration Building.
- E. Paving of the work yard, includes pervious concrete paving of a parking area immediately east of the new Administration Building.
- F. Installation of two (2) Electric Vehicle Charging Stations, east of Pump Station #1.

1.03 Related Work

- A. Work shall be constructed per the Contract Documents, as described in the Construction Drawings, and defined in the Technical Specifications, including all Addenda, written Interpretations and Clarifications, Work Change Directive, Field Orders, and approved Change Orders.
- B. Work shall be performed in compliance with the requirements of the Agreement, General Conditions, and Supplementary Conditions.
- C. Work shall be performed in compliance with manufacturers written instructions, directions, and recommendations for the application and/or installation of materials, finishes, products, fixtures, systems and equipment.
- D. Specifications in all Divisions of the Project Manual are mutually applicable.

1.04 Submittals

- A. Prior to commencement of work, Contractor shall submit:
 - 1. Preliminary Project Schedule indicating commencement and completion dates of key construction stages, critical milestone dates and date of substantial completion.
 - 2. Preliminary Shop Drawing and Submittal schedule indicating the projected submittal dates.
 - 3. Contractor's list of required permits and licenses indicating the Agency Having Jurisdiction that will issue the specific permit.
 - 4. Shop Drawings, Samples and Submittals, shall be provided to the Architect for review, in compliance with Section 01 33 00 Contractor Submittals
 - 5. List of anticipated requests for substitution of alternative materials, products, and /or systems for consideration as "Equal," within 15 business days after execution of the Agreement.
 - 6. Record Contract Documents as specified in Section 01 33 00.
 - 7. "As constructed" Construction Documents, maintained and updated at the Project Site, capturing and incorporating all approved changes and deviations in response to field conditions.

1.05 Standards

- A. Work shall be performed in conformance with applicable Federal, State and Local statutes and building codes, currently enforced, by Agencies Having Jurisdiction.
- B. Completed work shall be in compliance with Federal, State and Local construction and building codes, regulations, statues, ordinances, and standards under which the work is permitted, Including the 2022 California Building Standards Code (California Code of Regulations, Title 24) and associated Codes adopted by reference as a part of the California Building Code and the Municipal Code of the City of Santa Barbara.

1.06 Quality Assurance

Work shall be performed in a professional and workmanlike manner, consistent with that generally accepted in the industry and in compliance with Section 01 45 00 Quality Control.

1.07 Delivery, Storage and Handling

- A. All materials, products, fixtures, systems and equipment shall be transported to the site, delivered, and stored per the Manufacturer's and Suppliers written directions and recommendations, and in compliance with of the Section 01 60 00 Materials & Equipment.
- B. Materials, products, fixtures, systems and equipment, damaged, or lost, while in transport to site and/or delivery, shall be immediately replaced by the Contractor, at no cost to the District.

1.08 Warranties

Provide Certifications and Warranties in the format and for the duration Specified.

PART 2 PRODUCTS

2.01 General

- A. Specific product name, brand, manufacturer, or model number used to describe or identify materials, products, finishes, fixtures, systems or equipment are used as a Basis for Design, to establish an expected, or required, minimum level of quality, performance or aesthetics.
- B. Only those materials, products, finishes, fixtures, systems or equipment specified shall be incorporated into the work. Alternatives allowed are specified or named within each specification section. Substitutions shall be considered per Section 01 33 00.

- C. The New Administration Building is a component of the Goleta West Sanitary District, Headquarters, Building Upgrades Project. Two other components, the Operations Building and the Equipment Garage will have completed construction prior to the commencement of work on the New Administration Building. It is intended for the Building Components to have consistent, if not identical, appearance provided through use of identical, or prior approved, 'equal' finish materials, finishes, textures, colors, and detailing.
- D. Utilization of consistent, if not identical, or prior approved 'equal' materials, products, systems, fixtures, and equipment, as specified, is intended to mitigate long term operating costs.
- E. All materials, products, finishes, fixtures, systems or equipment incorporated into the work shall be new, and not refurbished, remanufactured or previously used in any manner. All materials, products, finishes, fixtures, systems or equipment shall be delivered to the site in sealed, original containers, or as originally distributed from the point of final manufacture or assembly.
- F. Damaged or defective materials, products, fixtures, systems or equipment shall be removed from the Site and replaced at the Contractor's expense, at no cost to the District.
- G. The Project will seek Leadership in Energy and Environmental Design (LEED) Certification. This requires submittal of documentation exhibiting compliance with stipulated criteria. This includes credit documentation for various construction components and practices. Materials, products, and systems incorporated into the Project have a direct impact on achieving LEED Certification. Criteria includes documentation of the Recycled Content, Regional Extraction, Harvesting, and /or Manufacturing, and Low (VOC)-Emission of materials, products, and systems incorporated into the work.
 1. Section 01 81 13.302.A. *Sustainable Design Requirements*.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. The Project Site is situated on Santa Barbara Municipal Airport property, in the City of Santa Barbara. The Site is accessed through the campus of the University of California, Santa Barbara (UCSB), and is located off of Parking Lot 32 (behind the police station).
- B. Existing conditions, surfaces and materials, including the site, and work just completed, shall be reviewed and examined prior to commencing work.
 1. Establish that proposed work location is free of any condition that would preclude installation of material, product or system, per industry standards or manufacturer's recommendations.
 2. Verify that locations, adjacencies, and dimensions are as indicated on the drawings.
 3. Notify the Architect, of specific conditions that do not appear as indicated and may require adjustments, adaptation, or revision prior to commencing installation.
 4. Do not begin installation until unsatisfactory conditions have been rectified.
- C. Due to the constrained Work area on Site, position of structures, and environmentally sensitive areas immediately adjacent to the Site, and the need for ongoing District operations to remain operational and unencumbered within a more restricted area, necessary to accommodate construction operations; an alternative approach to use of the Project Site for deliveries, storage and staging, (such as "Just in Time" JIT) may need to be considered.

3.02 Site Preparation

- A. The Headquarters of the Goleta West Sanitary District, a critical operations facility. The ongoing operations of the Goleta West Sanitary District shall not be impeded, nor disrupted.

- B. Site preparation encompasses deconstruction of approximately 1,170 SF single level, wood and masonry structures, including concrete slab on grade, foundations, and subgrade utility tie-ins, and infrastructure.
 - 1. Deconstruction per Section 02 42 13, *'Deconstruction of Structures.'*
- C. The Project will be seeking Leadership in Energy and Environmental Design (LEED) Certification. requires submittal of documentation as evidence of compliance with criteria necessary to obtain Certification. This includes credit for sustainable construction practices.
 - 1. The first Construction Criteria is compulsory. *Construction Activity Pollution Prevention*, per Section 01 81 13.302.A. *Sustainable Design Requirements*.
 - 2. An elective Credit under the category *Materials and Resources*, seeks to divert demolition and construction debris from disposal in landfills and redirect recyclable recovered resources to appropriate sites, per Section 01 81 13.302.B. *Sustainable Design Requirements*.

3.03 Installation, General

- A. Commencing installation of any materials, products, finishes, fixtures, systems or equipment shall constitute acceptance of existing conditions and surfaces and assumption of responsibility for satisfactory performance.
- B. Time is of the essence of the Contract. Once the work has commenced, it shall continue, unimpeded, until completed as provided for in the Notice to Proceed.
- C. The Work shall be completed within the Contract Time specified or Liquidated Damages will be assessed, per the Agreement.
- D. Contract Time specified shall include final cleanup of the construction and designated work area.

3.04 Perimeter Flood Wall

- A. Site is located within a FEMA designated Special Flood Hazard Area. Site is protected from flooding by a FEMA compliant Perimeter Flood Wall, surrounding the entire Site perimeter.
 - 1. Perimeter Flood Wall is comprised of permanent concrete masonry and cast-in-place concrete walls and demountable flood barriers.
 - 2. The existing cast-in-place concrete wall along the south boundary of the Site forms one portion of the Perimeter Flood Wall. The flat concrete 'strip/path' running north and south along the west boundary is the base for a demountable Flood Barrier system that is another component of the Perimeter Flood Wall.
 - 3. These Perimeter Flood Wall components, and others adjacent to the Project Site, shall remain in place, and be protected from damage throughout the course of construction.
 - 4. Perimeter Flood Wall components shall remain functional, throughout the course of construction, to provide the intended protection should a potential flood event arise. As such, components, particularly, Floor Barrier path to be protected from damage, remain free of debris and obstructions.
 - 5. The cast-in-place concrete walls, which must be protected from damage and maintained in a clean, clear, and serviceable condition, become an integral part of the exterior wall of the Administration Building

3.05 Contractor Use of Site

- A. The Work Site is the Headquarters of the Goleta West Sanitary District. As such, the Site shall remain operational throughout the course of demolition and construction. Demolition and construction shall not impede the work of the District in any manner, or at any time. The Contractor shall closely coordinate its work with the District, providing a minimum of Forty-eight (48) hours' notice prior to delivery of major project components or equipment, installations requiring cranes, lifts or heavy equipment and any work requiring trenching and/or paving.

- D. Use of the Site for staging and storage of materials, on-site fabrication facilities, and field offices shall be reviewed, and approved by the District, prior to use.
- C. The New Administration Building is a component of the Goleta West Sanitary District, Headquarters, Building Upgrades Project. Two other components, the Operations Building and the Equipment Garage will have completed construction prior to the commencement of work on the New Administration Building. It is intended for the Building Components to have consistent, if not identical, appearance provided through use of identical, or prior approved, 'equal' finish materials, finishes, textures, colors, and detailing.
- D. Utilization of consistent, if not identical, or prior approved 'equal' materials, products, systems, fixtures, and equipment, as specified, is intended to mitigate long term operating costs.

3.06 Use of Site by Others

The Contractor shall cooperate fully with all forces of the District or forces of other entities working under contract with the District. Contractor shall coordinate with the District, such that the work by the District or Others, will be facilitated, while not impeding the progress of the Contractor's work.

3.02 Protection and Cleaning

- A. Clean, and maintain, the work site free of used materials and debris. Clean, protect, and maintain installed materials, products, finishes, fixtures, systems, equipment and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities.
- B. Upon completion of all construction activities, remove all temporary protection and arrange for final review for acceptance. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 General

Contractor shall be responsible for providing all necessary documentation required in application for payment. Contractor shall accept payment, based on submitted documentation, as full compensation for all work completed and in place.

1.02 Reference Sections

- A. Part II, General Conditions, Article 14 Payments to the Contractor.
- B. Part II, General Conditions, Article 18 California State Requirements
- C. Specifications in all Divisions of the Project Manual are mutually applicable.

PART ELEMENTS

2.01 Units of Measurement

- A. Measurement of completed work, in place, shall be based on the Construction Documents.
- B. Measurement of work completed, and in place, and of materials, systems and products, on site, awaiting installation shall be in accordance with United States Measurement Standards and as accepted, by general practice, in the industry.

2.02 Payment

- A. Payment shall be full compensation for all labor, materials, equipment, incidentals and services, including utilities, transportation and temporary facilities required for completed work, in place to date, as drawn and specified in the Contract Documents.
- B. Payment for materials, systems or products, prior to placement, shall be compensated for, only if located on site and intended for installation prior to subsequent Application for Payment.

PART 3 EXECUTION

3.01 Documentation

- A. Documentation of completed work, or materials, systems and products, including those on site and awaiting installation, shall include quantities, or units, based on the established Schedule of Values.
- B. Materials, systems and products, on site, awaiting installation included in an Application for Payment, shall comply with Part II, General Conditions, Article 14 Payments to the Contractor.
- C. Materials, systems and products, on site, included in an Application for Payment shall enumerate the quantity, or number of units, awaiting installation. Vendor invoices, listing the materials, systems or products and corresponding quantities shall be provided with the Application for Payment.
- D. Electronic documentation of installed work shall be provided as specified in Section 01 32 00.

END OF SECTION

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PART 1 GENERAL

1.01 General

- A. Contractor shall be responsible for scheduling all project meetings and ensuring that all key participants, or their designated representatives, are available and will be present.
- B. Conferences and Project Meetings are intended to facilitate the construction process through regular communication between the Contractor, Architect and Owner. This will enable, and expedite, critical decision-making and approvals required. The Conferences and Project Meetings will provide a format for review and discussion of the project progress and allow the Contractor, Architect and Owner to be prepared for potential issues in upcoming construction phases.
- C. Meeting minutes prepared by the Contractor shall serve as documentation of agreements arrived at during the course of a meeting, as well as specific decisions made, or direction given.

1.02 Reference Sections

- A. Part II- Conditions of the Contract, General Conditions, Article 2 Preliminary Matters
- B. Part II- Conditions of the Contract, General Conditions, Article 6 Contractor's Responsibilities
- C. 01 32 00 Construction Progress Documentation
- D. Specifications in all Divisions of the Project Manual are mutually applicable.

PART 2 ELEMENTS

2.01 Conferences

- A. Pre-construction Conference, General Conditions, Article 2.07
 - 1. Confirm Project Team, Roles and Responsibilities
 - 2. Establish Communication Protocols
 - 3. Review the Owner's, Project Intent and Goals
 - 4. Review the Contractor's, Approach to meet Owner's, Project Intent and Goals
 - 5. Review the Contractor's proposed Project Schedule
 - 6. Review the Project Schedule of Values
 - 7. Review the Process Procedures for:
 - a. Requests for Information
 - b. Submittals, Shop Drawings, Samples
 - c. Inspections and Testing
 - d. Work Change Proposal
 - e. Contractor's Application for Payment
 - f. Change Order
 - g. Construction Documentation
 - 8. Review Project Closeout Procedures
- B. Pre-Installation Conferences, as required in Technical Specification Sections
- C. Special Inspections as required in Technical Specification Sections
- D. Substantial Completion Conference

2.02 Project Meetings

- A. Contractor shall schedule meetings, at agreed upon, regular intervals.
 - 1. Review Project Status
 - 2. Review Project Schedule
 - 3. Facilitate communication between the Contractor, Architect and Owner
 - a. Review, discuss, and expedite critical decisions/ approvals
- B. Established venue, format
- C. Established Protocols and Documentation

2.03 Site Walks

- A. Entry to the Construction Area, shall be acknowledged by the Contractor, including:
 - 1. Owner's Representative(s)
 - 2. Architect/ Architect's Consulting Engineers
 - 3. Code Official(s)/ Fire Marshall(s)
 - 4. First Responders
- B. Site Visits shall be arranged, scheduled, and approved by the Contractor.
 - 1. Contractor shall accompany, approved, Individuals entering the Construction Area
 - 2. Contractor shall provide safety briefing to all Visitors
 - 3. Contractor shall provide Visitors with required Safety Gear, including, but not limited to:
 - a. Safety Hard Hat
 - b. Safety Eye Protection
 - c. Safety Visibility Vest
 - 4. Contractor shall advise Visitor(s) arranging a Site Visit of appropriate clothing and footwear
- C. Contractor shall maintain a Log of all Site Visitors including:
 - 1. Name, Title, and Entity Representing
 - 2. Date, and Time of Entry and Exit
 - 3. General Purpose for Visit
 - 4. Confirmation of appropriate Safety Gear
 - 5. Confirmation of Safety Briefing, when required
 - 6. Log shall note General Weather for each day
- D. Contractor shall be responsible for the safety of individuals within the boundaries of the Work.

PART 3 EXECUTION

3.01 Scheduling

- A. Contractor shall schedule Project Meetings and Conferences.
- B. Contractor shall notify all required, and optional, Participants of Scheduled Meeting.
 - 1. Contractor shall include Purpose for Meeting and any preparation required beforehand
- C. Contractor shall confirm that required Participants or their designated Representatives will attend.
- D. Project Meeting intervals shall be established at Pre-Construction Conference.
- E. Contractor shall provide Attendees with a copy of the Meeting Minutes, after the Meeting, allowing time for Response with Comments or Corrections, prior to issuing Record copy.

END OF SECTION

PART 1 GENERAL

1.01 General

- A. Contractor shall be responsible for preparing initial construction project management documents, used to monitor and track the progress of the work.
- B. Contractor shall update these on a regular basis and maintain them current. Documentation shall include, but not be limited to:
 - 1. Record Construction Documents
 - 2. Construction Schedule
 - 3. Submittal and Shop Drawing Schedule
 - 4. Material and Product Samples
 - 5. Photographic Image Documentation

1.02 Related Sections

- A. 01 33 00 Submittal Procedures
- B. 01 71 13 Mobilization
- C. 01 77 00 Closeout Procedures
- D. Specifications in all Divisions of the Project Manual are mutually applicable.

PART 2 ELEMENTS

2.01 Construction Schedule

- A. Contractor shall prepare, maintain, and update the Construction Schedule, on a regular basis.
- B. Construction Schedule shall include the following, based on items included in the Bid Schedule:
 - 1. Mobilization
 - 2. Procurement Activities
 - 3. Submittal Review Timeframes
 - 4. Construction Activity (*per item*)
 - a. Pre-activity Dependence/ Required Preconstruction or Preparation
 - b. Interdependent / Required Coordination
 - c. Commencement
 - d. Milestones
 - e. Completion
 - 5. Overall Construction
 - a. Key Progress (*Validation/Confirmation*) Dates
 - b. Required phasing/ duration
 - c. Startup and Testing
 - d. Substantial Completion
 - e. Punch List and Final Completion
 - 6. Demobilization/ Closeout

2.02 Shop Drawing and Submittal Schedule

- A. The Contractor's Shop Drawing and Submittal schedule shall include projected submittal dates of the various project components.

2.03 Photographic Image Documentation

- A. Contractor shall document construction progress through photographic imaging.
Use of drones for imaging shall not be allowed, due to proximity of airport.

2.04 Record Construction Documents

- A. Contractor shall maintain Permit Set of Construction Drawings and Technical Specifications
 1. Document work 'as constructed'
 2. Document covered work that differs from drawn configuration
 3. Document changes/ adaptations/ adjustments due to unforeseen and unknown conditions
 4. Document changes to the Work resulting from Approved Change Orders
- B. Contractor shall capture, and document work progress and work completed daily.
- C. Documentation shall be available for review, as it shall form the basis of Applications for Payment.
- D. At completion, Record Construction Document to be submitted to the District, through the Architect.

PART 3 EXECUTION

3.01 Construction Schedule

- A. Contractor shall update the Construction Schedule at weekly intervals, to reflect actual construction progress and activities.
- B. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made.
- C. Issue updated schedule concurrently with meeting minutes.
- D. Issue a report following approval of significant Change Orders, impacting a change in the Contract Time or changes in logic, durations, actual starts and finishes, and activity durations.
- E. As the Work progresses, indicate percentage of completion for each activity.

3.02 Shop Drawing and Submittal Schedule

- A. Contractor shall update Submittal and Shop Drawing Schedule on a bi-weekly basis, for reporting at Project Meetings. Update to Schedule shall include, but is not limited to:
 1. Long lead items, Status
 2. Submittal dates, Compliance or Delays
 3. Review timeframes, Compliance or Delays

3.03 Photographic Image Documentation

Use of drones, for imaging, shall not be allowed, without specific written approval from Airport authority.

- A. Project Facility Exterior - A digital photograph shall be taken, from the same exterior vantage point and at the same time, on a daily (*workday*) basis, through Substantial Completion.
 1. Images to be date and time stamped.
 2. Vantage point shall be confirmed at Pre- Construction Conference.

- B. Project Facility Interior – A digital photograph shall be taken of:
 - 1. Mechanical (HVAC)
 - 2. Mechanical (Plumbing)
 - 3. Fire Suppression System
 - 4. Electrical
 - 5. Photograph systems within framed wall construction,
 - a. Prior to wall closure, and following the installation of major components and finish work through Substantial Completion of interiors. Images to be date and time stamped.
 - 6. Architectural Finishes and Built-ins
- C. Contractor shall back-up electronic files, daily, to preclude potential loss of files.
- D. At completion, Photographic Documentation to be submitted, in electronic format, to the District, through the Architect.

END OF SECTION

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PART 1 GENERAL

1.01 Submittals

- A. Contractor shall be responsible for preparing, assembling, and transmitting the following:
 - 1. Preliminary Construction Schedule
 - 2. Shop Drawing and Submittal Schedule
 - 3. List of Required Permits and Licenses
 - 4. Shop Drawings
 - 5. Samples
 - 6. Substitutions
 - 7. Record Contract Documents
 - 8. "As Constructed" Construction Documents
 - 9. Photographic Image Documentation

1.02 Substitutions

- A. The Work shall be based on the materials, products, and systems as shown on the Drawings and as defined and described in the Technical Specifications. Specific product, material, and trade names, where used as the basis of design, is to establish the minimum level of required performance, quality, and aesthetic. Requests for substitutions shall be accepted after the Effective Date of the Agreement. The procedure for submittal, by the Contractor, of an alternative for consideration is set forth in this Section.

PART 2 ELEMENTS

2.01 Project Preparatory Submittals

- A. The Contractor shall, as indicated in the Notice to Proceed, submit the following three items prior to commencement of the Work:
 - 1. Construction Schedule
 - 2. Shop Drawing and Submittal Schedule
 - 3. Permits and Licenses

2.02 Shop Drawings

- A. Required 'Shop Drawings' are identified in each Technical Specification Section. It is understood that Shop Drawings expand on information, provided in the Contract Documents. Additional detail is critical for appropriate application and installation of specific materials, products, and systems, in coordination with required structural support, utilities, and adjacent construction, materials, and finishes.

2.03 Samples

- A. Similar to Shop Drawings, the requirement for submittal of Samples shall be drawn from the submittal requirements of each Technical Section within the Project Manual. Submittal of Samples requested in the Technical Specifications shall follow the submittal protocols, and number of required submittal copies, of a Shop Drawing submittal. The Review process will be the same.

2.04 Substitutions

- A. The Work shall be based on the materials, products, and systems shown on the Drawings and defined and described in the Technical Specifications. Specific product, material, and trade names, where used, as the basis of design, is to establish the minimum level of required performance, quality, and aesthetic. Requests to substitute alternative materials, products, and systems will be accepted after the Effective Date of the Agreement. The procedure for submittal, by the Contractor, of an alternative for consideration is set forth in this Section.

2.05 Record Contract Documents

- A. Required submittals that shall become part of the Contract Record include, elements that impact the contract price, contract time, project schedule, and include the following but are not limited to:
 - 1. Schedules
 - 2. Lists
 - 3. Warranties and Certifications
 - 4. O&M Manuals
 - 5. Amendments to the Contract for Construction
 - 6. Change Orders
 - 7. Work Change Directives
 - 8. Field Orders

2.06 Record Construction Documents

- A. Contractor shall maintain documentation on permit set of construction drawings and technical specifications to capture changes in the work and as documentation of actual installation, in hidden conditions. Documentation of "as constructed" conditions shall become the Record Construction Document to be submitted to the District, through the Architect.

2.07 Photographic Image Documentation

- A. Contractor shall document construction progress through photographic imaging.

Use of drones for imaging shall not be allowed, due to proximity of airport, without prior, written, authorization, from Airport Authority.

PART 3 EXECUTION

3.01 Construction Schedule

- A. Preliminary Construction Schedule shall include the following, based on items included in the Bid Schedule, at a minimum:
 - 1. Mobilization
 - 2. Procurement Activities
 - 3. Submittal Review Timeframes
 - 4. Construction Activity (*per item*)
 - a. Pre-activity dependence/ required preconstruction or preparation
 - b. Interdependent / required coordination
 - c. Commencement
 - d. Milestones
 - e. Completion
 - 5. Overall Construction
 - a. Key Progress (*Validation/Confirmation*) Dates
 - b. Required phasing/ duration
 - c. Startup and Testing
 - d. Substantial Completion
 - e. Punch List and Final Completion
 - 6. Demobilization/ Closeout

3.02 Shop Drawing and Submittal Schedule

- A. Contractor shall, develop a Schedule of Shop Drawings and Submittals based on the requirements of each section of the Technical Specifications. Contractor shall confirm with the subcontractors, where appropriate, to add to the Shop Drawing and Submittal Schedule the anticipated submittal dates. Shop Drawings and Submittals shall be limited to those required in the Technical Specifications.
- B. Contractor's Schedule of Shop Drawings and Submittals based on the requirements of each section of the Technical Specifications. Schedule shall include:
 - 1. Long lead items, Status
 - 2. Submittal dates, Compliance or Delays
 - 3. Review timeframes, Compliance or Delays
 - 4. Required procurement/ fabrication confirmation date, Status
- C. The Contractor shall prioritize the items listed in the Schedule of Submittals, and coordinate the submittal dates with the Construction Schedule, to allow sufficient time for review of the submittal and subsequent procurement of that component for installation.
- D. Contractor shall identify those components that have an extended procurement, fabrication, delivery or installment timeframe. These shall be designated "long-lead items," and shall have the highest priority for review and procurement.
- E. Contractor shall, within 15 business days after execution of the Agreement, submit all requests for substitution of alternative materials, products, and /or systems for consideration as "Equal" to those included in the Technical Specifications or shown on the drawings, as provided for under Section 3400 of the California Public Contract Code. Substitutions, or Alternatives, to materials, products and/or systems specified or shown on the drawings will not be considered if submitted after the timeframe indicated.

3.03 Permits and Licenses

- A. Contractor shall assemble and submit a List of required permits and licenses that the Contractor is responsible to obtain. The List shall indicate the Agency Having Jurisdiction that will issue the specific permit, or necessary approval, and the anticipated date of receipt of the permit or approval.

3.04 Shop Drawing Submittal and Review Process

- A. Submittals and Shop Drawings shall be made in electronic (.pdf or jpeg) format. If electronic submittal is precluded due to the specific nature, or criteria set by the material, product, or system; Contractor shall submit three (3) copies of each shop drawing, for review, in addition to the number of copies the contractor requires for their use. All Submittals shall be transmitted using the Contractor's standard transmittal form, listing each specific item included within the Submittal. A separate transmittal form shall be used for each individual Shop Drawing or Submittal. Transmittal of a submittal consisting of various items using a single transmittal form will be permitted only when the items taken together constitute a single manufacturer's "package" submittal or are so functionally related that expediency indicates review of the individual items as a group. A multiple-page submittal shall be collated into sets, and each set shall be bound, as appropriate, prior to transmittal.
- B. The Contractor's standard transmittal form shall have the Contractor's contact information, similar in format as their company letterhead.
- C. Contractor shall review submittals, in detail, prior to transmittal, by an authorized representative of the Contractor. Each submittal shall be dated, signed, and certified by the Contractor, as being correct and in strict conformance with the Contract Documents. Each Sheet of Drawings, submitted, shall be dated, signed, and certified. No consideration for review of any submittals will be made for any items which have not been reviewed, signed and certified by the Contractor. All non-certified submittals will be returned to the Contractor without action. Resulting delays are the responsibility of the Contractor.

- D. Shop Drawings and Submittals shall be reviewed and returned within fifteen (15) business days of receipt.
- E. The Architect shall review complete, well prepared, and certified submittals and a, single, resubmittal, if required. The District reserves the right to withhold monies from the Contractor to cover the additional service fees that will be charged for reviews beyond the second submittal.
- F. The Architect's review of Shop Drawings and Submittals are for compliance with the intent of the Contract Documents. The Architect's review response will provide direction relative "Resubmittals." If a Resubmittal is required, it shall follow the submittal protocols, and number of required submittal copies, of the first submittal. The Review process will be the same
- G. Shop Drawing and Submittal reviews shall not relieve the Contractor of responsibility for the additional detail and installation information provided. The Contractor retains responsibility for compliance with the intent of the Contract Documents.

3.05 Samples

- A. Submittal of Samples requested in the Technical Specifications shall follow the submittal protocols, and number of required submittal copies, of a Shop Drawing submittal. The Review process will be the same, as well.
- B. Due to the nature of Samples, the number of Samples required for a submittal may vary. If a specific number of Samples required is not stipulated in the Technical Specifications; consideration shall be given to the type, scale, material, weight, and similar characteristics. The nature of a Sample may reduce the number of Samples required to be submitted and shall be verified, to avoid delays.
- C. If the Architect requires a single Sample to be submitted, it shall not be returned to the Contractor.
- D. The Architect's review response, for a Sample, shall be indicated on the Contractor's transmittal form, that accompanied the Sample submittal. If space precludes this; the Architect's review response will be noted on the Architect's letterhead and attached to the Contractor's transmittal form and returned.
- E. If the Contractor requires a physical Sample submittal to be returned; the Contractor shall, as required by the Shop Drawing protocol, provide additional Samples, in the numbers the Contractor requires returned, for their use. If the Contractor requests that a reviewed Sample be returned and provides the additional Samples; the Contractor shall provide a means for the Architect to return the additional Sample(s) and shall cover any postage or shipping cost associated with the return.
- F. Sample submittals shall be transmitted using the Contractor's standard transmittal form, describing the specific item(s) included within the Submittal.

3.06 Substitutions

- A. Specific product, material, and trade names, where used, as the basis of design, is to establish the minimum level of required performance, quality, and aesthetic. Requests to substitute alternative materials, products, and systems will be accepted after the Effective Date of the Agreement. Contractor shall, within 15 business days after execution of the Agreement, submit all requests for substitution of alternative materials, products, and /or systems for consideration as "Equal" to those included in the Technical Specifications or shown on the drawings, as provided for under Section 3400 of the California Public Contract Code. Substitutions, or Alternatives, to materials, products and/or systems specified or shown on the drawings will not be considered if submitted after the timeframe indicated.
- B. The names or names and contact information of manufacturers or suppliers, of materials, products, and/or systems are referenced for the convenience of the Contractor. No restriction or direction is intended thereby.

- C. The Contractor may, at their sole expense, offer an alternative to any material, product, and/or system for consideration as “equal.” It shall be the sole responsibility of the Contractor to provide substantiation of equality in performance, quality, and aesthetic. Should the Contractor choose to submit a request for consideration of an alternative; the request shall only be accepted if submitted within the timeframe stipulated. Alternatives shall not be submitted for consideration where the cost of the alternative submitted is greater than that of the item specified.
- D. The Contractor shall provide organized data, in similar quantities as a Shop Drawing submittal. The substantiation material shall not be comprised solely of manufacturers or suppliers’ information and brochures. Data provided shall strive to be impartial and focused on the crucial criteria of the material, product, or system specified. Contractor shall expediently provide any additional information requested by the reviewer.
- E. Acceptance of an alternative shall not relieve Contractor of the responsibility for compliance with the Contract Documents and for adequacy of the alternative item. The Contractor shall be responsible for resultant changes and all additional costs which the substitution results in.
- F. No initial project bid, shall include an alternative material, product or system. All costs included in the Bid Schedule shall be based solely on the materials, products, and systems specified. Alternatives shall not be accepted “by default,” if included within a base bid. If discovered prior to bid award, the Contractor’s Bid shall be declared non-responsive and returned to the submitter. Should it be discovered, after entering into an agreement with the prevailing Contractor, that the cost of a specified item was based on an Alternative that was not submitted for consideration; the Contractor shall provide one of the specified items, in lieu of the alternative, at no cost to the District.

3.07 Record Contract Documents

- A. Required submittals, listed in 2.05, become part of the Contract Record. As such, the Contractor shall retain all approved changes to the Contract, specified documents schedules and lists in an organized fashion, with the most current version of each.
- B. The documents specified will be submitted to the Owner at Substantial Completion.

3.08 Record Construction Documents

- A. Beginning with the Contract Documents “permit set,” the Contractor shall maintain documentation on this set of construction drawings and technical specifications to capture changes in the work and as documentation of actual installation, in hidden conditions. This set noting “as built” conditions, shall be turned over to the District, through the Architect, upon Substantial Completion, as a part of the Record Set of Contract Documents. The Contract Documents, including the construction drawings and specifications will include direction to the Contractor issued from Bidding through Substantial Completion. Documentation shall include, but is not limited to:
 - 1. Confirm that any addenda issued during the Bid phase is reflected in the documents
 - 2. Capture, directed and approved, changes to the construction drawings and specifications
 - a. Change Orders
 - b. Work Change Directives
 - 3. Capture adjustments made in the field in response to material or system constraints.
 - a. Field Orders
 - b. Responses to Requests for Information (RFIs)
 - 4. Maintain this set as the “Record Documents” which will be ultimately turned over to the District.
 - 5. Make the record set of contract documents available, for reference, on site.
- B. Contractor’s working coordination set capturing work progress and actual work completed, shall be updated daily and shall be available for review, as it shall form the basis of Applications for Payment (*measurement*). Contractor overlay of Construction Drawings to indicate:

1. Site and Facility construction phasing
2. Subcontractor activity and coordination
3. Subcontractor/ Discipline phasing
4. Subcontractor completed work
5. Completed work by discipline and/or zone
6. Weekly and monthly forecasts

3.09 Photographic Image Documentation

Use of drones for imaging shall not be allowed, due to proximity of airport.

- A. Contractor shall document construction progress through photographic imaging.
- B. Contractor shall back-up electronic files, daily, to preclude potential loss of files.
- C. At completion, Photographic Documentation to be submitted, in electronic format, to the District, through the Architect.

END OF SECTION

PART 1 GENERAL

1.01 General

Where no date is associated with a reference to published codes, standards, or other regulations, it shall be understood that the latest published edition, adopted by the Agency Having Jurisdiction shall be applicable. No requirements set forth herein, or included in the contract documents, shall be waived because of any provision of, or omission from, said standards or requirements. Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

1.02 Reference Specifications, Codes, and Standards

- A. All work specified herein shall conform to, or exceed, the requirements of all applicable codes and standards. These standards establish the minimum requirements acceptable.
- B. References herein to codes shall mean the following listed codes in effect at the time of Bidding of this Project, as adopted by the Agency Having Jurisdiction, including all addenda, modifications, amendments, or other lawful changes thereto:
 - 1. California Code of Regulations, Title 24, 2022 California Building Code, Part 2 (Volumes 1 &2), as published by the California Building Standards Commission, including Appendix Chapters G and J.
 - 2. California Code of Regulations, Title 24, Part 3, 2022 California Electrical Code, as published by the California Building Standards Commission.
 - 3. California Code of Regulations, Title 24, Part 4, 2022 California Mechanical Code, as published by the California Building Standards Commission.
 - 4. California Code of Regulations, Title 24, Part 5, 2022 California Plumbing Code, as published by the California Building Standards Commission.
 - 5. California Code of Regulations, Title 24, Part 6, 2022 California Energy Code, as published by the California Building Standards Commission.
 - 6. California Code of Regulations, Title 24, Part 9, 2022 California Fire Code, as published by the California Building Standards Commission.
 - 7. California Code of Regulations, Title 24, Part 11, 2022 California Green Building Standards Code (CALGreen Code), as published by the California Building Standards Commission.
 - 8. California Code of Regulations, Title 24, Part 12, 2022 California Reference Standards Code, as published by the California Building Standards Commission.
 - 9. Santa Barbara Municipal Code, Ordinance 6107, and March 2023 Code Supplement.

- C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Architect for clarification and directions prior to ordering or providing any materials or labor. The Contractor shall bid the most stringent requirements. The contractor shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

1.03 Abbreviations and Acronyms

- A. Where the Specifications refer to standards, criteria, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. The following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	Associated General Contractors
AI	The 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 Standards Institute, Inc.
APA	American Plywood Association
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWS	American Welding Society
CLPCA	California Lathing & Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI DHI	Concrete Reinforcing Steel Institute Door and Hardware Institute
ETL	Electrical Test Laboratories
GA	Gypsum Association
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES IMI	Illuminating Engineering Society International Masonry Institute
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ITE	Institute of Traffic Engineers
MBMA NAAMM	Metal Building Manufacturer's Association National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association

NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
OSHA	Occupational Safety and Health Administration (Federal)
PCA SDI SDI	Portland Cement Association Steel Deck Institute Steel Door Institute
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

END OF SECTION

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PART 1 GENERAL

1.01 General

Contractor shall be responsible for Quality Control including:

- A. Quality of products and workmanship
- B. Manufacturer's directions and instructions
- C. Manufacturer's certificates and field services
- D. Mockups
- E. Independent Laboratory Testing

1.02 Related Work

- A. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Quality of Products and Workmanship

- A. Contractor shall be responsible for quality control to produce Work in accordance with the quality stipulated in the Contract Documents.
- B. Contractor shall oversee the work to ensure that qualified personnel are engaged to complete the Work and to ensure that the workmanship on the project meets industry standards.

1.04 Manufacturer's Directions and Instructions

Contractor shall ensure that the Manufacturer's written Directions and Instructions are followed.

1.05 Manufacturer's Certificates and Field Services

Contractor shall require compliance with specified field observation, by a manufacturer's authorized representative, of prep, installation, and/or start-up and testing to obtain the manufacturer's certification of the installation.

1.06 Mock-up

When specified, Contractor shall construct a Mock-up for use in evaluation of the construction application of the specified materials, the Contractor's ability to meet the intent of the design, in application, and as a standard for evaluation of the finished work.

1.07 Independent Inspections and Laboratory Testing

The DISTRICT will employ and pay for Independent Inspection, Sampling and Independent Laboratory Testing when required by the Contract Documents. The CONTRACTOR shall be responsible for arranging and scheduling required inspections, sampling and testing. The Contractor shall coordinate the inspections and testing with the Architect.

PART 2 ELEMENTS

2.01 Not Used

PART 3 EXECUTION

3.01 Quality of Products and Workmanship

- A. Contractor assumes responsibility for quality control through procurement of materials, products and systems directly or through subcontractors and for workmanship of the Contractor's own personnel or that of subcontractors.
- B. As indicated in Section 01 33 00, the Contractor shall review and certify Shop Drawing submittals. Contractor's responsibility for Quality Control extends through procurement and installation.
- C. Contractor shall maintain industry standards in terms of quality workmanship.

3.02 Manufacturer's Directions and Instructions

- A. Contractor shall ensure that Manufacturer's written directions, recommendations, and instructions are followed and adhered to, in detail.
- B. Should Manufacturer's written position, conflict with the Contract Documents; the Contractor shall request clarification from the Architect.

3.03 Manufacturer's Certificates and Field Services

- A. When Specified, a manufacturer's authorized representative shall visit the site to observe conditions and surfaces prior to installation of the Manufacturer's material or product. The Manufacturer's authorized representative shall acknowledge the suitability for commencement of installation or provide written direction for required adjustments or corrections. Where specified, the Manufacturer's representative shall observe the installation of the manufacturer's materials or product; and/or observe testing and start-up of the installation. The outcome of such observation shall be the Manufacturer's written Certification that the field conditions observed, are acceptable for installation; the installation of the product meets the Manufacturer's standards; or the testing and start-up of the Manufacturer's product was successful. The Manufacturer's Representative may need to issue written direction or instructions for correcting field conditions, the installation, or adjustments to ensure a successful re-test. The Manufacturer's presence serves as validation of the installation and serves to reinforce the Manufacturer's responsibility for their material or product.
- B. The Contractor shall coordinate, with the Architect to arrange the site visit. The Contractor shall provide the Architect with a copy of determinations issued by the Manufacturer's Representative, within ten (10) business days of the Site Visit.
- C. Contractor shall document a Manufacturer's Representatives' site visit for observation of an installation, or pre-installation, and the conclusion of that site visit. Alternatively, the Contractor shall review, and acknowledge by signature, the Manufacturer's documentation of their observations and conclusions. Contractor shall document, in writing, that Manufacturer's observations were addressed to the satisfaction of the Manufacturer.
- D. Documentation of the site visit, by a Manufacturer's Representative, shall be in addition to the Manufacturer's Certification that may be a specified outcome. Documentation of the site visit may be limited to 'log entries.'

3.04 Mock-up

- A. Due to the nature of work, materials, and/or construction application, a Mock-up of a portion of the work may be specified for evaluation. The intent is not solely to evaluate the materials in use. The intent of a Mock-up is to evaluate the construction application of the materials, the Contractor's ability to meet the intent of the design, in application, and as a standard for evaluation of the finished work.

- B. If a Mock-up is specified; it may be constructed in a location, within the construction, that will allow it to remain in place, and become a portion of the finished construction. The location for construction of the specified Mock-up, if intended to be incorporated into the finished work, shall be recommended by the Contractor and approved by the Architect. For expediency, or by their own determination, the Contractor may choose to construct the Mock-up in a separate location, and not incorporate it into the finished work. If the Contractor chooses not to incorporate the Mock-up into the finished work, it shall be constructed in a location, convenient to the work, but such that will allow it to remain in place until all similar portions of the finished work are substantially complete and capable of being reviewed for acceptability.
- C. The Mock-up, shall remain in place for use as a standard of materials, and quality of installation against which the balance of similar aspects of the work, can be evaluated for acceptability.
- D. Once all portions of the work, similar in materials and construction, are complete and accepted; the Mock-up, if constructed in a separate location, may be removed by the Contractor. Prior to removing the Mock-up, the Contractor shall obtain the Architect's acknowledgement, that the Mock-up's use has been served and may be removed.

3.05 Independent Inspections and Laboratory Testing

- A. Independent inspections, field sampling and laboratory testing shall be coordinated with the Architect, and the Architect's Consultants. The Work, or portions thereof, shall be subject to intermittent, or continuous, inspection as required by code or as specified.
- B. The presence of an Inspector, on site, shall not relieve the Contractor of the responsibility for the proper execution of the Work in accordance with the Contract Documents. Compliance with the intent of the Contract Documents, and applicable codes, ordinances and statutes is the responsibility of the Contractor. The Contractor shall not be relieved of this responsibility by any act or omission on the part of an Inspector.
- C. Samples and test specimens required under the Contract Documents shall be prepared and taken by an Independent Testing Laboratory retained by the District. Unless otherwise specified, all sampling and testing shall be completed in accordance with current ASTM standards or other specified standards, as applicable to the class and nature of the article or materials considered.
- D. Failure of any portion of the Work to meet specified testing standards, shall be reasonable cause for removal, or correction and reconstruction, of any such work in accordance with the General Conditions.

END OF SECTION

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PART 1 GENERAL

1.01 General

- A. The Project Site is the Headquarters of the Goleta West Sanitary District and must remain operational and unencumbered, throughout the course of Demolition and Construction.
- B. The Project Site is located immediately adjacent to the Goleta Slough, designated an environmentally sensitive wetland. Contractor shall exercise care in use of the site by its personnel and that of its subcontractors. Contractor shall comply with all applicable regulatory and environmental protection requirements, enforced by Agencies Having Jurisdiction. Contractor shall assume full responsibility for any infringement, impact, or damage to any portion of the adjacent wetlands.
- C. Contractor shall provide all temporary services, utilities, conveniences, facilities, enclosures, and security, necessary to prosecute the work.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Utilities

- A. Contractor shall ascertain service and utility requirements necessary for the work.
- B. Contractor shall arrange, and pay, for utility and service connections at, and distribution from, existing services and sources of supply, necessary for construction.
- C. As indicated, the Project Site is the Headquarters of the Goleta West Sanitary District and must remain operational and unencumbered. To preclude any potential impact to District operations and its systems; the Contractor shall provide for separate utility connections, for construction purposes.

3.02 Power and Lighting

- A. The Contractor shall arrange, and provide, for power required for its operations under the Agreement.
- B. Contractor shall ensure that temporary power lines required are installed, and maintained, in a safe and professional manner.
- C. All temporary electrical connections and installations shall be approved by the District and the Power Company serving the District.
- D. Contractor shall ensure that all Work conducted is suitably lit, to provide for proper working conditions and to afford adequate facilities for inspection.

3.03 Water Supply

- A. The Contractor shall arrange, and provide, for water required for its operations under the Agreement. The Contractor shall obtain water, required for construction of the project, from the Goleta Water District.
- B. The Contractor shall furnish all drinking water, on the site, during construction. Notices shall be conspicuously, throughout the site warning personnel that piped water may be contaminated.
- C. Contractor shall not make connection to, or draw water from, any pipeline without first obtaining permission of the authority having jurisdiction over the use of said pipeline and from the agency owning the affected water system. For each such connection made, the Contractor shall first attach a valve, meter, and backflow preventer of a size and type acceptable to the Authority Having Jurisdiction. The backflow preventer shall be tested and certified prior to use. The temporary meter shall receive certification by the Authority, prior to installation.

3.04 Fire Protection

- A. Contractor shall ensure that all parts of the Work are protected, with temporary measures, against potential fire damage. Contractor shall train designated construction personnel in the operation of fire apparatus to protect construction personnel, and prevent or minimize potential fire hazards where appropriate, until official first responders arrive. Contractor shall train all construction personnel in proper response, and exit procedures, to potential fire hazards.

3.05 Sanitation

- A. Contractor shall provide chemical toilets, and separate handwashing facilities (in close proximity) for use by construction personnel. Contractor shall collect all sanitary and organic wastes on a regular, daily, basis. All waste and refuse from sanitary facilities, provided by the Contractor, shall be disposed of away from the site in a manner satisfactory to the District and in accordance with all laws and regulations pertaining thereto.
- B. Contractor shall make provisions for accessible sanitary facilities in compliance with local, state, and federal statutes, ordinances, and regulations.

3.06 Communications

- A. Contractor shall provide, and maintain throughout the course of the Work, not less than one telephone, or cellular telephone, in good working order, at its own field construction office, at or near the site of the Work included in the Contract. Each such telephone shall be connected to an established commercial exchange service. Telephone shall be for Emergency Use.
- B. Contractor shall provide a device capable of printing, scanning, and faxing (8½"x 11" and 11"x17") documents at its field construction office, included in the Contract. Device shall be connected to the internet and accessible by Wi-Fi. Contractor shall permit the District, the Architect and their Consultants, use of the device at no cost.

3.07 Parking

- A. The Contractor shall coordinate with the District to establish the quantity of available parking spaces, for construction personnel. Contractor may need to arrange, and pay, for remote parking for construction personnel within Contract parameters. If remote parking is required, the Contractor shall provide shuttle service for personnel and shall be responsible for security of the vehicles.
- B. Pervious Concrete parking area along west boundary of site shall not be used for personnel parking, staging, storage, loading, drop-offs, or temporary holding of materials, products, or equipment. Accidental damage to these surfaces shall be repaired by the Contractor at their cost.

3.08 Traffic Control

- A. Prior to start of Work, the Contractor shall examine routing of, personal and construction, vehicles to and from the site. As previously noted, the Project Site is accessed through the campus of the University of California, Santa Barbara (UCSB). The Contractor shall determine if this imposes any constraints, special conditions, or requirements for vehicular routing, procedures, or safeguards necessary to carry out the Work. The Contractor shall be responsible for compliance with any conditions resulting from this relationship. In addition, the Contractor shall be responsible for:
 - 1. Controlling construction traffic within and adjacent to the Site.
 - 2. Providing controlled entrances, and safeguards, required or necessary to the progress of the Work, and effectively controlling such traffic to minimize potential hazards to personnel and the Work.
 - 3. Routing all construction equipment, trucks, and similar vehicles on existing public streets to and from the Site as provided for, and allowed, by the University, the City, and the State.
 - 4. Keeping streets adjacent to the Site open to public vehicles and pedestrian traffic.
 - 5. Maintaining free and clear access, to the Project Site, for police, fire and ambulance service.

3.08 Use of Site

- A. Prior to start of Work, and any construction presence on the Project Work Site, the Contractor shall coordinate with the District, and the Architect, to review the extent of the Work and the Contractors required presence on Site. This shall include the Contractor's anticipated project phasing, material deliveries, staging, equipment, storage, construction waste management and contractor's offices.
- B. The District shall consider the needs of the Contractor and determine the extent of the site that may be used by the Contractor, and its forces, to prosecute the Work. The Contractor and the District shall agree on the preferred use (e.g. staging, construction offices, etc.) of the site allocation, to minimize the impact on District operations.
- C. The District's authorization, for use of the Site by the Contractor, shall not relieve the Contractor of responsibility for protection of the Site and Facilities from damage, and responsibility for repairing any damage inflicted and restoring the Site and Facilities to their original condition.
- D. Contractor shall coordinate deliveries, of major components for construction and significant quantities of building materials, with the District to preclude impacting District operations. If necessary and approved, or requested, by the District; deliveries may be scheduled "off business hours."
- E. If requested by the District, to accommodate legitimate operation requirements, the Contractor shall relocate temporary services or facilities.

3.10 Construction Facilities

- A. Contractor shall provide a field office for its use and use by its Subcontractors, in the location reviewed, and approved, by the District. The office shall be sized such that, if needed, it may be used by other Team Members, including the Architect, Architect's consultants, Owner's Representative, Manufacturer's Representatives, Suppliers, Vendors, and Representatives of AHJ.
- B. Construction office(s) shall be weathertight, conditioned and lit for general office use. Contractor shall have the offices cleaned daily and maintained in good repair.

3.11 Security

Contractor shall provide security to protect the Work, stored materials and equipment, and temporary facilities from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program. Security within limits of construction shall be Contractor's responsibility.

3.12 Medical First Aid

- A. Contractor shall have a written procedure on the handling of medical emergencies on site, posted in a prominent position, adjacent to Cal/OSHA approved First-aid cabinet.
- B. First-aid cabinet shall be maintained with medical supplies for the treatment of minor cuts and scratches.
- C. Contractor shall provide periodic training of recommended procedures to implement in the event of more serious accidents, until emergency first responders arrive on-site.

END OF SECTION

PART 1 GENERAL

1.01 General

- A. The Project Site is, the Headquarters of the Goleta West Sanitary District, located immediately adjacent to the Goleta Slough, designated an environmentally sensitive wetland.
- B. Contractor shall comply with applicable regulatory and environmental protection requirements, enforced by Agencies Having Jurisdiction.
- C. Existing structures will be demolished to provide a building pad, for the defined Scope of Work, completely within the existing perimeter wall. Portions of the deconstruction will be immediately adjacent to the Perimeter Flood Wall, which will be incorporated into the work. As such, the Contractor shall exercise care in use of the site by its personnel and that of its subcontractors, so as not to infringe, or physically impact the designated wetlands. Contractor shall assume full responsibility for any infringement, impact, or damage to any portion of the adjacent wetlands.

1.02 Standards

- A. Hazardous Material is any material that:
 - 1. Is regulated as a hazardous material per 49 CFR 173
 - 2. Requires a Material Safety Data Sheet (MSDS) per 29 CFR 1910.120
 - 3. During end use, treatment, handling, packaging, storage, transpiration, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D
- B. Biological Assessment:
Goleta West Sanitary District; Biological Assessment, April 26, 2016; Rachel Tierney, Botanical and General Biological Consultant
- C. Chemicals used during construction including: pesticides, disinfectants, polymers, reactants or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Noise Abatement

- A. Work, on Site, shall be executed with minimal unnecessary noise. Special measures shall be taken to suppress noise. Noise emanating from construction activities shall not exceed maximum levels allowed by local ordinance.
- B. Internal combustion engines, used in the Work, shall be equipped with a manufacturer recommended muffler. No internal combustion engine shall be operated without said muffler and/or as specified by local and/or state regulations.

3.02 Nesting Birds

Birds and their eggs nesting on or near the project site are protected under the Migratory Bird Treaty Act and pursuing, hunting, taking, capturing, killing, or attempt to do any of the above is a violation of federal and state regulations. No trimming or removing brush or trees shall occur if nesting birds are found in the vegetation. All care should be taken not to disturb the nest(s). Removal or trimming may only occur after the young have fledged from the nest(s).

3.03 Dust Control

Keep dust down, during deconstruction and construction. Use vacuuming, wet mopping, wet sweeping, or wet power brooming in lieu of dry power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not shake out bags of cement, concrete mortar, or plaster.

3.04 Air Quality

- A. All portable diesel-powered construction equipment shall be registered with the state's portable equipment registration program OR shall obtain an APCD permit.
- B. Fleet owners of mobile construction equipment are subject to the California Air Resource Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter (PM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- C. All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible
- D. Diesel construction equipment meeting the California Air Resources Board (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.
- E. Diesel powered equipment should be replaced by electric equipment whenever feasible.
- F. If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.
- G. Catalytic converters shall be installed on gasoline-powered equipment.
- H. All construction equipment shall be maintained in tune per the manufacturer's specifications.
- I. The engine size of construction equipment shall be the minimum practical size.
- J. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time. Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

3.05 Dumpsters

Dumpsters shall be equipped with a secure cover, which shall be kept closed at all times. Dumpsters shall be emptied at least once a week. or as needed to keep the site free of construction waste and debris. For large or heavy deconstruction, dumpsters without lids are acceptable but should not have debris higher than the sides before emptying.

3.06 Petroleum Products

- A. Fuel and lubricate tools and equipment in a manner that protects against spills and evaporation. Manage all used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while on-site exhibits a characteristic of hazardous waste. Used oil containing 1000 parts per million of solvents will be considered a hazardous waste and disposed of at Contractor's expense. Used oil mixed waste will be considered a hazardous waste.
- B. Maintain spill cleanup equipment and materials at the work site. Clean up all hazardous and non-hazardous waste spills.

3.07 Stormwater Runoff

- A. Contractor shall implement Erosion Control Plan for Work Site.
- B. The Headquarters will continue to drain to an onsite wet well, which is then pumped to the Goleta Sanitary District Treatment Plant. There is no current or proposed drainage from the site to the adjacent wetlands.
- C. All crew shall be notified to be careful not to disturb areas outside of the fence (unpaved) and not to place anything outside of the pavement.
- D. All storage shall take place on the paved areas. The drainage and bordering area to the south and all areas outside of the fencing shall be checked daily for debris.
- E. Following construction, all debris, etc., shall be removed from natural (unpaved) areas.

3.08 LEED

- A. Leadership in Energy and Environmental Design (LEED) Certification is being pursued for this facility. The Contractor shall assist in achieving LEED Certification. Construction credits are based on sustainable practices incorporated into the Construction process. Credits include the following:
 - 1. Sustainable Sites - Prerequisite 1: Construction Activity Pollution Prevention, Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.
 - 2. Materials and Resources - Credit 2: Construction Waste Management, Divert demolition and construction debris from disposal in landfills and redirect recyclable recovered resources, and reusable materials to appropriate sites.

END OF SECTION

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PART 1 GENERAL

1.01 General

Within 30 business days of Notice to Proceed, Contractor shall erect a Project Identification sign in a visible location approved by the District, close to the Site entrance designated for use by the Contractor.

1.02 Submittals

Prior to production of the sign, Contractor shall submit the design drawing for review in compliance with Section 01 33 00.

1.03 Quality Assurance

- A. Contractor shall procure the sign from a professional sign company, experienced with small scale, non-internally lit, signs.
- B. Contractor shall confirm that the selected sign company is capable of producing, delivering, and installing the construction sign within the timeframe allotted.
- C. Construction sign, as installed, shall be produced using materials of high quality and finish to allow it to remain presentable through the construction timeframe. The Contractor shall be responsible for maintaining the sign in a presentable condition, throughout the construction timeframe, as determined by the District and the Architect. The Contractor shall assume responsibility for, all costs associated with, maintenance of the sign in a presentable condition.

1.04 Standards

- A. Per the Municipal Code, City of Santa Barbara, 22.70.030
 - 1. A single, temporary, construction sign is considered exempt and shall be allowed without a sign permit.
 - 2. The sign shall not exceed 24 square feet or six feet in height, above adjacent grade.
 - 3. The sign shall only provide identification of the firms, and shall not contain any contact information e.g. address, phone number, website.
 - 4. Sign shall be removed upon completion of construction.

PART 2 PRODUCTS

2.01 General

Construction Sign shall be produced from materials that will remain presentable, in the local environment, throughout the construction timeframe, or are maintainable, as recommended by the professional sign company. The sign shall be maintained in a presentable condition, as determined by the District and the Architect, and as would be acceptable by local industry standards throughout the construction timeframe, at no additional cost to the Owner.

PART 3 EXECUTION

3.01 General

- A. Construction sign design shall be based on Figure A., and in compliance with Section 22.70.030 of the City of Santa Barbara, Municipal Code.
- B. The prevailing Contractor shall place their company logo within the area allocated on the sign and insert their company name, only, in the space above the logo, as indicated.
- C. Contractor shall confirm the names, titles, and correct spelling of the Goleta West Sanitary District, Board of Directors and that of the General Manager and that of the Architect through the submittal procedure defined in Section 01 33 00 of the Specification.

3.02 Production and Installation

- A. Commencing production of the sign constitutes understanding and acceptance of the design and information to be provided on the sign. In the instance where production commenced prior to receipt of the reviewed design submittal; the Contractor shall be responsible for making any corrections necessary, at no cost to the Owner.
- B. Similarly, with the installation of the sign, in the field; the Contractor shall verify, prior to start of the installation the location of services and utilities below grade in the area designated for the sign. Should any interferences be located below grade, once the installation has commenced, the Contractor shall be responsible for making any corrections necessary, at no cost to the Owner.

3.03 Protection and Removal

- A. Sign shall be installed in a location where it will not be subject to potential damage from vehicles and equipment. Contractor shall be responsible for repair and/or replacement of a damaged sign if the damage could have been reasonably avoided by placement of the sign.
- B. Contractor shall remove sign as a part of Demobilization, following conclusion of construction and acceptance of the project, by the Owner. Contractor shall restore the area, that the sign was located on, to its original condition.

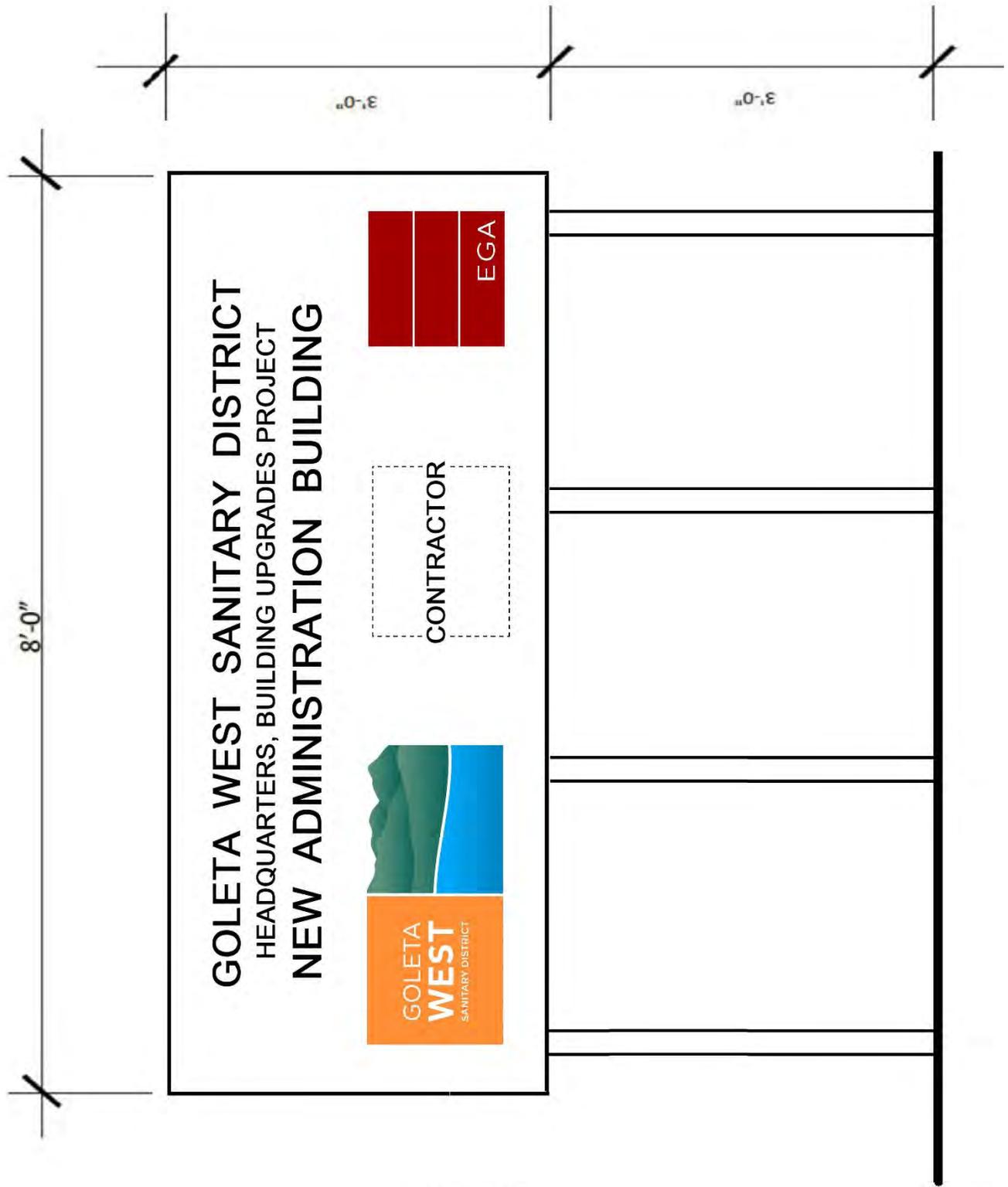


Figure 'A'

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**GWSD, NEW ADMINISTRATION BUILDING
01 60 00 PRODUCTS, MATERIALS, and EQUIPMENT**

PART 1 GENERAL

1.01 Definitions

Definitions in this Section are not intended to negate the generally accepted meaning of other terms used in the Contract Documents, including: "accessories," "finishes," "furnishings," "special construction," "specialties," "structure," "systems," and similar terms, which are self-explanatory and have generally recognized and accepted meanings in the construction industry.

- A. Products – Includes items purchased for incorporation into the work, regardless whether specifically purchased for the project or taken from Contractor's stock of previously purchased products.
- B. Materials - Products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work.
- C. Equipment - Products with operational parts, either motorized or manually operated, or a combination thereof; particularly including products with service connections (wiring, piping, etc.).

1.02 Quality Assurance

- A. Source Limitations: To the greatest extent possible for each unit of work, the Contractor shall provide products, materials, or equipment, of a singular kind, from a single source.
- B. Compatibility of Options: Where more than one option of a product, material, equipment, or system is available for selection by the Contractor; the Contractor shall select an option which is compatible with other products, materials, equipment, or systems previously selected and/or installed. Compatibility is a basic general requirement of product/material selections.

1.03 Delivery, Storage, and Handling

- A. Contractor shall deliver, handle, and store products in accordance with manufacturer's written instructions and recommendations, and by means and methods intended to minimize or prevent damage, deterioration, loss, and theft.
- B. Delivery schedules shall be structured and controlled to minimize long-term storage at site and overcrowding of space allocated for the Contractor's use.
- C. Contractor shall specifically coordinate the delivery and installation of products and materials recognized to be hazardous, easily damaged, susceptible to deterioration or frequency of theft.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Transportation and Handling

- A. Products shall be transported by methods to avoid product damage and shall be delivered in undamaged condition in manufacturer's dry, unopened containers or packaging.

- B. Contractor shall provide equipment and personnel to handle products, materials, and equipment including those provided by District, by methods to prevent soiling and damage.
- C. Contractor shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

3.02 Storage and Protection

- A. Products shall be stored in accordance with manufacturer's written instructions and recommendations, in original packaging, wrapping, or containers with seals and labels intact and legible. Sensitive products shall be stored in weather-tight enclosures, with controlled temperature and humidity ranges maintained within those required by the manufacturer.
- B. Exterior storage of fabricated products, shall be on supports above ground, sloped to provide positive drainage of moisture. Products subject to deterioration shall be covered with impervious material and provided means of ventilation to preclude condensation.
- C. Loose granular materials shall be stored on solid surfaces in a self-drained area and shall be prevented from mixing with foreign matter.
- D. Storage shall be arranged to provide access for inspection. The Contractor shall periodically inspect to assure products are undamaged and are maintained under required conditions.
- E. Storage shall be arranged in a manner that will provide access for maintenance of stored items for inspection.

3.03 Maintenance of Storage

- A. Stored products shall be inspected on a regularly scheduled basis. Contractor shall maintain a log of inspections and shall make said log available to the Architect, or his Consultant's, on request.
- B. Contractor shall verify that storage facilities comply with manufacturer's written product storage requirements.
- C. Contractor shall verify that environmental conditions in the manufacturer's written requirements are maintained continually.
- D. Contractor shall verify that any product surface exposed to the elements is not adversely affected. Should any finish be weathered it shall be, refinished to meet the specified criteria or, replaced.

3.04 Maintenance of Equipment Storage

- A. Contractor shall ensure that a copy of the manufacturer's written service instructions accompanies each piece of mechanical and/or electrical equipment, in long-term storage, with a notice of the enclosed instruction affixed to the exterior of package.
- B. Stored equipment shall be inspected on a regularly scheduled basis. Contractor shall maintain a log of inspections and shall make said log available to the Architect, or his Consultant's, on request.

END OF SECTION

PART 1 GENERAL

1.01 General

Prior to Mobilization, on site, Contractor shall review, in detail, their proposed use of the Project Site with the District and obtain written approval. The Project Site is the District's Headquarters and is, and will continue to be, a working site, including a critical Pump Station serving the District. Construction operations shall not impede the work of the District at any time. The Contractor's use of the Project Site shall be limited to construction operations including material, product, and equipment deliveries, storage, and staging, placement of Temporary Construction Facilities, and personnel parking. Use of the Headquarters facilities site for staging, storage of materials, supplies and equipment, and field offices shall be reviewed with, and approved by, the District. Contractor shall be responsible for obtaining the District's approval for use of the site, well in advance of their need, so as not to impede the approved construction schedule.

1.02 Mobilization

- A. Mobilization shall commence upon receipt of Notice to Award. Contractor shall procure and deliver to the District all bonds, insurance, and required permits specified.
- B. Upon review, and approval by the District, of the Contractor's proposed use of the Project Site; the Contractor shall begin Mobilization, on Site, to commence the Work as expeditiously as possible.

1.03 Demobilization

Upon completion of all Construction Contract responsibilities, the Contractor shall remove all Construction presence from the District Headquarters Site. Contractor shall restore areas of the Site used for, or impacted by, Construction operations to their original condition. Concurrently, Contractor shall make all required final submittals, to the District, for Contract Closeout.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Mobilization

- A. Mobilization, shall commence upon receipt of Notice to Award, with the Contractor submitting contractual documents stipulated in the Notice of Award and the Notice to Proceed.
- B. Prior to mobilization on site, Contractor shall:
 - 1. Prepare, and submit for the District's review and approval, a proposal on use of the Site
 - 2. Schedule the Pre-Construction Conference
 - 3. Procure required permits and licenses that will be required to prosecute the Work
- C. On Site Mobilization shall commence upon receipt of written approval, from the District, of the Contractor's proposed use of the Project Site.

- D. Mobilization shall include, but is not be limited to:
 - 1. Arranging for, and installation of, Construction utilities and services
 - 2. Arranging for, and installation of, Temporary Facilities per Section 01 5000
 - 3. Posting all OSHA required notices and establishment of safety programs.
 - 4. Placement of Contractor's Superintendent at the job site full time, per Article 6.01 of the General Conditions of the Contract.
 - 5. Arranging for waste management and delivery of appropriate collection dumpsters
 - 6. Procurement and delivery of Construction Equipment, Materials, and Supplies

3.02 Demobilization

- A. Demobilization shall commence upon issuance of Notice of Substantial Completion, to the District, by the Contractor.
- B. Contractor shall schedule a conference, with the District and the Architect, at Substantial Completion, to review the project status and next steps to achieve Project Closeout.
- C. Demobilization shall include but not be limited to:
 - 1. Addressing all remaining Construction Items on the Punch List
 - 2. Procurement of required Occupancy Permits and any other required reviews, inspections, and/or approvals required by the Agencies Having Jurisdiction, for occupancy
 - 3. Delivery of Record Documents, per Section 01 33 00
 - 4. Coordination and removal of all remaining construction services and utilities
 - 5. Removal of all temporary construction facilities
(Contractor's Superintendent's office may be the last to be removed, if necessary)
 - 6. Final cleanup of project site
 - 7. Restoration of Site area, used by Contractor, to pre-construction condition
- D. Upon completion of all contractual responsibilities relative to the Work, on Site:
As may be agreed to, the Contractor's Project Manager and the Contractor's Superintendent shall meet with the Architect, off site, after work hours, and of their own accord as individuals, not representing their respective employers and with no link to the Project or the District, at a mutually convenient local Tavern, for a "celebratory" beverage of their respective selection.

END OF SECTION

PART 1 GENERAL

1.01 General

- A. The Work includes deconstruction of existing facilities immediately adjacent to a recently completed Perimeter Flood Wall, which is to, remain and, become a part of the finished Work. In addition, Work area is in close proximity to new construction that is operational. Contractor shall be responsible for taking precautions necessary to protect personnel health and safety, and to protect existing facilities, and equipment adjacent to, and in close proximity to the Work, from damage.
- B. Contractor shall be responsible to correct and repair or replace damage inflicted, either directly or indirectly to existing facilities by any act, omission, neglect, or misconduct of the Contractor or Subcontractors, in executing the Work.
- C. Should the Contractor fail to protect and safeguard the existing facilities, adjacent to the Work; the District, subsequent to written notification of the Contractor, may implement measures to protect the existing facilities, adjacent to the Work.
 - 1. The cost to implement such measures shall be paid by Contractor. The District may deduct, from payments due the Contractor, the amounts incurred to implement protective measures.
 - 2. Implementation of protective measures, by the District, shall not relieve the Contractor from the responsibility to take precautions necessary to protect personnel health and safety, and to protect existing facilities, and equipment adjacent to the Work, from damage.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 General

- A. To mitigate potential injury or damage resulting from Work immediately adjacent to existing facilities; the Contractor shall review the potential hazards with the personnel engaged in the Work.
- B. As stipulated in the Agreement, the Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Prior to commencing work immediately adjacent to existing structures and critical equipment; it is recommended that the Contractor review and consider responses to unexpected developments.
- C. The Contractor shall provide regular safety training and monitoring of all personnel on Site, including workers, testing and inspection personnel, representatives of Agencies Having Jurisdiction, Architect and Engineering Consultants, District representatives, and Visitors.
- D. Only trained personnel, with appropriate safety gear, that are directly involved with the work shall be in proximity of areas deemed hazardous. Temporary barricades shall be erected around work areas deemed to be hazardous. Signs shall be posted along the barricades indicating the hazard; with warnings against entering the area without prior authorization.

3.02 Deconstruction

- A. Removal of existing building structures, systems, fixtures and building components adjacent to existing structures scheduled to remain shall be “deconstructed,” in lieu of “demolished,” to mitigate potential damage to building components and equipment to remain.
- B. Contractor shall determine the sequence of deconstruction adjacent to existing structures to remain and establish means to minimize the potential for accidental damage to those components.
- C. Contractor shall be prepared to initiate repairs to critical equipment, systems, and components, designated to remain, in place or, operational throughout the period of construction.
- D. Where equipment, systems, or components may require temporary relocation to facilitate deconstruction; the Contractor shall:
 - 1. Coordinate with the District to determine an optimal day and time for the displacement
 - 2. Strive to minimize the timeframe of the required displacement
 - 3. Keep the District apprised of Work progress in the area necessitating the relocation
 - 4. Keep the District apprised of the anticipated date for replacement and immediately notify the District if the date and/or time of the replacement changes, and the reason for the adjustment
 - 5. Test and validate the functionality of the replaced equipment

3.03 Site Protection

- A. Contractor shall minimize the use of vehicles and equipment on site and outside of the immediate construction zones.
- B. Contractor shall:
 - 1. Establish a protocol for all deliveries and required vehicular or equipment access to the Site
 - 2. Review the proposed protocol with the District prior to implementation
 - 3. Notify Subcontractors, material suppliers, and delivery companies of the established protocol
 - 4. Limit the delivery of construction components, equipment and materials to designated zones
- C. With approval of the District; the Contractor shall provide a suitable staging area, including designated zones for equipment, materials and supplies, organized so as not to interfere with ongoing District operations or progress of the Work.
- D. Contractor shall erect barricades to keep vehicles from being driven into hazardous areas. Use appropriately colored and reflective paint to be visible from dusk to dawn. Maintain not less than one light at each barricade.
- E. Provide a location, for the collection of construction debris, waste, and scrap, that will not impede on the District’s operations or the progress of the Work. Provide for regular removal of the refuse.
- F. Landscaped areas, designated for use by the Contractor, shall be protected from damage. Protect existing trees from damage. Protect root systems from damage. Do not store materials or equipment or park construction equipment and vehicles within foliage drip lines.

3.04 Protection of Facilities

- A. Contractor shall protect projections, wall corners and jambs, sills, and soffits of openings, in areas used for traffic and for passage of materials and equipment.
- B. Contractor shall use proper protective covering and exercise care when moving equipment, construction materials or tools through or adjacent to existing facilities or new construction.

- C. Do not place construction materials directly on concrete slabs, raise materials off slabs on wood pallets or significant wood members. Provide impervious protection or pans to collect oil and cuttings from piping, conduits, and equipment and to preclude rust staining.
- D. Do not place loads on new concrete slabs, less than 28 days old, without specific written permission of Structural Engineer.
- E. To preclude potential damage, do not place materials or supplies directly on roof or structure. Provide protective separation to avoid accidental damage.
- F. Do not place materials, supplies, equipment or tools in a concentrated area of a roof or structure. Loads shall be distributed, as equally as practical. Do not place more materials or supplies, on a roof or structure, than can be reasonably installed within one workday.
- G. Do not place any loads on a roof or structure that may exceed the design capacity.
- H. Restrict access to roofs except as required to execute or test and inspect the Work. Protect installed work from potential damage during subsequent work and installations.
- I. Where practical and provided within the sequence of Work; install materials susceptible to damage from material, supply or tool movement, last in the sequence. Once installed clean and provide protective wrapping of these materials, equipment or installations. Uncover, for review, at Substantial Completion.

END OF SECTION

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PART 1 GENERAL

1.01 General

- A. Contractor assumes responsibility for all cutting, coring, and rough patching, on site.
- B. Finish patching shall be the responsibility of the Contractor and shall be performed by the trade associated with the application of the particular finish.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Cutting and Patching

- A. Contractor assumes responsibility for cutting and patching, required to complete the work or to:
 - 1. Make its several parts fit together properly
 - 2. Uncover portions of the work to provide for installation of ill-timed or unscheduled work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents
 - 5. Provide penetrations that impact structural members or finish surfaces
 - 6. Remove and reinstall or relocate materials or equipment.

3.02 Alteration Request

- A. Contractor shall submit a written request prior to executing cutting and/or alterations, not shown or detailed on the contract documents, which affect or require:
 - 1. Cutting structural members
 - 2. Holes drilled in beams or other structural members
 - 3. Structural value or integrity of any element of the project
 - 4. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems
 - 5. Efficiency, operational life, maintenance or safety of operational elements
 - 6. Change to manufacturer's warranty
 - 7. Visual qualities of sight-exposed elements

END OF SECTION

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PART 1 GENERAL

1.01 Completion of the Work

- A. Completion of the WORK, as the term is used in this Contract, shall mean Substantial Completion of the Work and acceptance by the District. Substantial Completion is the stage in the construction of the project when the Work, or a specified portion thereof, has progressed to a point where it can be utilized for its intended use.
- B. Per Article 14.06 of the General Conditions of the Contract; the Contractor shall notify the District and the Architect when it is deemed that the Work is ready for its intended use. Within an established timeframe thereafter, the Architect shall review the work and determine if the Work is, in fact, Substantially Complete.
- C. With Notice of Substantial Completion, Contractor shall provide written confirmation that all LEED Credits assigned to the Contractor have been completed and accepted by GBCI. Section 01 81 13.
- D. The Architect shall advise the District when the Work is at a stage of completion and ready for acceptance. The Architect shall provide the Contractor with confirmation of the completed Work or issue the Contractor a list of items to be completed and/or corrected prior to acceptance.
- E. The completed work shall not be occupied, for use, until the Agencies Having Jurisdiction have reviewed the work for code compliance, meeting the intent of the permit documents, and established that occupancy of the facility will not pose a threat to the Health, Safety and Welfare of the Public. The Agency Having Jurisdiction shall, at that time, issue an Occupancy Permit, allowing use of the finished Work.
- F. The Architect shall advise the District, and the Contractor, when the Contractor has satisfied the requirements of the Construction Contract and has obtained approval from the Agency Having Jurisdiction, for use of the Work.
- G. Upon notification, from the Architect, that the Work is ready for acceptance, by the District; the Contractor shall commence Closeout of the Project Work.

1.02 Contract Closeout

- A. Final acceptance of the Work, by the District, will be withheld until the Contractor has satisfactorily met the specified requirements for Construction Closeout including:
 - 1. Notice of Substantial Completion
 - 2. Completion of remaining Construction items (*Punch List*)
 - 3. Procurement of Final Approvals from Agencies Having Jurisdiction
 - 4. Record Documents submitted
 - 5. Training of District Operations Staff
 - 6. Removal of all Temporary Facilities
 - 7. Final cleanup of the project site
 - 8. Restoration of Site area, used by Contractor, to pre-construction condition

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Notice of Substantial Completion

- A. Contractor shall notify the District and the Architect when it is deemed that the Work is Substantially Complete, as defined in the General Conditions of the Contract.
- B. Upon notification; the Architect and the Architect's Consultant's shall review the Work for compliance with the intent of the Contract Documents. The Architect shall issue a List of items requiring attention, correction, repair or replacement prior to acceptance of the Work.
- C. Contractor shall schedule a meeting upon Substantial Completion to review the Contract Closeout with the District and the Architect.
- D. Contractor shall advise the Architect upon completion of the outstanding construction items. Upon verification of the completion of the Work; the Architect shall advise the District and recommend acceptance of the Work.
- E. Upon acceptance of the Work; the Contractor shall complete the Work required to close out the Project.
- F. Per the General Conditions of the Contract, the District shall have the right to retain an additional amount of money, from the final progress payment due the Contractor, to cover the value of uncompleted construction items, enumerated by the Architect during the course of the final review.
- G. The Contractor shall complete the Contract Closeout within the Contract Time, indicated in the Agreement.

3.02 Completion of Remaining Construction items (*Punch List*)

- A. Upon written notice from the Contractor that the entire Work or an agreed portion thereof is complete, the Architect will make a final observation of the work with the District and the Contractor and will notify the Contractor in writing of all items in the Work which is incomplete or deficient. The Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.
- B. The Contractor shall make all repairs and replacements promptly upon receipt of written order from the District. If the Contractor fails to make such repairs or replacements promptly, the District reserves the right to do the work or to have the work done by others and the Contractor and its Surety shall be liable to the District for the cost thereof.

3.03 Procurement of Final Approvals from Agencies Having Jurisdiction

- A. Upon Substantial Completion, and following completion outstanding construction items, Contractor shall request review of the Work by the Agencies Having Jurisdiction.
- B. Upon receipt of approval of the Work, by the Agency Having Jurisdiction, Contractor shall request issuance of a Certificate of Occupancy.

3.04 Record Documents submitted

- A. Contractor shall incorporate revisions, into the Record Documents, resulting from field conditions, changes resulting from reviews of the Work by the Architect, District, and Agencies Having Jurisdiction.
- B. Contractor shall submit, completed Record Documents, per Section 01 32 00.

3.05 Training of District Operations Staff

- A. Contractor shall complete review of the Operations and Maintenance Manual with the District's Operation Staff and provide training per Section 01 78 23, prior to end of the Contract Time.

3.06 Removal of all Temporary Facilities

- A. Contractor shall arrange, and pay, for removal of any remaining services and/or utilities installed for construction purposes.
- B. Contractor shall remove any remaining Temporary Facilities, storage sheds, fences, and enclosures.

3.07 Final Cleanup and Site Restoration

- A. Contractor shall remove all trash, debris and waste remaining on Site and legally dispose of it.
- B. Contractor shall remove any remaining construction dumpsters.
- C. Contractor shall restore all areas, used by the Contractor, to their pre-construction condition.

3.08 Contract Closeout

- A. Upon determination that the Contractor has fulfilled their Contractual Obligations, within the Contract Time allocated; the Contractor shall make their Final Application for Payment, as specified in the General Conditions of the Contract.

END OF SECTION

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- D. American Society for Testing and Materials (ASTM) International
- E. Factory Mutual Approvals (FM)
- F. National Fire Protection Association (NFPA)
- G. SAE International
- H. Sheet Metal and Air Conditioning National Contractors Association (SMACNA)
- I. Underwriters Laboratories (UL)

1.04 Submittals

- A. Contractor shall maintain individual files, with supporting documentation, for each assigned Credit. File shall be accessible to the Architect at all times. Architect shall have the right to copy the file.
 - 1. Copy of Credit description, criteria, and associated information from 2009 LEED Reference Guide for Green Building Design and Construction, provided in Part 3, Section 01 81 13.
 - 2. Outline of Response Approach and Draft Response.
 - 4. Copies of supporting documentation, data, calculations, drawings, and photographs
- B. Contractor shall provide regular updates of the Credit reporting status.

PART 2 PRODUCTS

2.01 General

- A. Materials, products, and systems incorporated into the Project will have a direct impact on the viability of achieving LEED Certification. Criteria for review, and evaluation of submittals, and proposed substitutions, will expand on the specifications to include Recycled Content, Regional Extraction, Harvesting, and /or Manufacturing, and Low (VOC)-Emission.
- B. Additional criteria will include proportional cost, or weight, of materials, products, and systems in contrast with total cost or percentage of weight of components, as defined by LEED

PART 3 EXECUTION

3.01 Preparation

- A. Subsequent to receipt of Notice to Proceed and prior to field mobilization, and prior to Pre-Construction Conference, Contractor shall meet with the Architect to review the Contractor's responsibilities relative to LEED Certification.
- B. Prior to meeting with Architect, Contractor shall identify a specific individual who shall be responsible to coordinate Contractor's LEED Credit Documentation.
 - 1. Contractor's designated LEED Coordinator shall attend initial meeting, and all subsequent LEED coordination meetings.
 - 2. Contractor's designated LEED Coordinator shall be authorized by the Architect's LEED Administrator to upload credit documentation.
 - 3. Contractor's designated LEED Coordinator shall maintain Contractor's credit documentation in process and shall assemble the documentation in the required format, for submittal.
- C. Prior to Site Mobilization, Contractor shall become familiar with the LEED Construction Credits assigned, as enumerated below.

- D. At the Pre-Construction Conference; Contractor shall:
 - 1. Confirm credit compliance capability.
 - 2. Express concerns regarding compliance with specific Credits.
Discuss alternative credit approach
 - 3. Provide an outline of compliance documentation approach.

3.02 Construction Credits

- A. Sustainable Sites - Prerequisite 1: Construction Activity Pollution Prevention
 - 1. Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.
 - 2. Create and implement an erosion and sedimentation control plan for all construction activities associated with the project. Plan must conform with erosion and sedimentation requirements of the 2003 EPA Construction General Plan OR local standards and codes, whichever is most stringent. Plan must describe the measures implemented to accomplish the following objectives:
 - a. Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
 - b. Prevent sedimentation of storm sewers
 - c. Prevent pollution of the air with dust and particulate matter.
- B. Materials and Resources - Credit 2: Construction Waste Management
 - 1. Divert demolition and construction debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites.
 - 2. Recycle and/or salvage non-hazardous demolition and construction debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on-Site or co-mingled. Excavated soil and land clearing debris do not contribute to this credit. Calculations can be done by weight or volume but must be consistent. A minimum of 50 percent, of debris, is required to be recycled or salvaged, to obtain credit.
- C. Materials and Resources - Credit 4: Recycled Content
 - 1. Increased use of building products that incorporate recycled content materials, assists in reducing impacts resulting from the extraction and processing of virgin materials.
 - 2. Utilize materials whose recycle content is comprised of postconsumer content and ½ of the preconsumer content is at least 10 percent, based on cost, of the total value of the materials used on the Project.
 - 3. The recycled content value of a material is determined by weight. The recycled fraction, of the assembly is multiplied by the cost of assembly to establish the recycled content value.
 - 4. Mechanical, Electrical, and Plumbing components, and specialty items such as elevators cannot be included in this calculation. Only include materials permanently installed in the work.
- D. Materials and Resources - Credit 5: Regional Materials
 - 1. Increase the use of building materials and products that are extracted and manufactured within the region, and thereby support the use of indigenous resources, which in turn reduces the environmental impact resulting from transportation.
 - 2. Use building materials or products that have been extracted, harvested, recovered, or manufactured within 500 miles of the Project Site, for a minimum of 10 percent (based on cost) of the total materials value. If only a fraction of the materials or products meet the distance criteria, then only that percentage (by weight) contributes to the regional value. The minimum percentage, to obtain credit, is 10 percent.
 - 3. Mechanical, Electrical, and Plumbing components, and specialty items such as elevators cannot be included in this calculation. Only include materials permanently installed in the work.

- E. Indoor Environmental Quality - Credit 3.1: Construction Indoor Air Quality Management Plan – During Construction
 - 1. Reduce indoor air quality (IAQ) problems from construction to promote the comfort and well-being of construction workers and building occupants.
 - 2. Develop and implement an IAQ management plan for the construction and preoccupancy phases of the building, as prescribed in the Reference Guide.
 - a. During construction, meet or exceed recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3).
 - b. Protect stored on-site and installed absorptive materials from moisture damage.
 - c. If permanently installed air handlers are used during construction, filtration media with a minimum efficiency reporting value (MERV) of 8 must be used at each return air grille, as determined by ASHRAE Standard 52.2-1999 (with errata but without addenda). Remove all filtration media immediately prior to occupancy.

- F. Indoor Environmental Quality – Credit 3.2: Construction Indoor Air Quality – Management Plan – Before Occupancy
 - 1. Reduce indoor air quality (IAQ) problems from construction to promote the comfort and well-being of construction workers and building occupants.
 - 2. Develop a written IAQ Management Plan and implement it after all finishes have been installed and the Building has been completely cleaned before occupancy.
 - a. Establish cleanliness baseline by implementing one of the options enumerated in v2009 LEED Reference Guide.
 - 3. Demonstrate that the contaminant maximum concentrations, provided in the v20089 LEED Reference Guide, are not exceeded.
 - a. Conduct air sample testing, as described in v2009 LEED Reference Guide, to establish that the contaminant maximum concentrations are not exceeded.

- G. Indoor Environmental Quality - Credit 4.1: Low Emitting Materials – Adhesives and Sealants
 - 1. Reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of installers and occupants.
 - 2. Adhesives, sealants, and sealant primers used on the interior of the building shall comply with South Coast Air Quality Management District (SCAQMD) Rule #1168, Volatile Organic Compound (VOC) limits.

- H. Indoor Environmental Quality - Credit 4.2: Low Emitting Materials – Paints and Coatings
 - 1. Reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of installers and occupants.
 - 2. Paints and coatings used on the interior of the building shall comply with the following criteria:
 - a. Architectural paints and coatings applied to the interior walls and ceilings shall not exceed the Volatile Organic Compound (VOC) limits established in the Green Seal Standard GS-11, Paints, 1st edition, May 20, 1993.
 - b. Wood Finishes, stains, sealers, and primers applied to interior elements shall not exceed the Volatile Organic Compound (VOC) limits established in the South Coast Air Quality Management District (SCAQMD) Rule #113, Architectural Coatings, rules in effect on January 1, 2004.

- J. Indoor Environmental Quality - Credit 4.3: Low Emitting Materials – Flooring Systems
 - 1. Reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of installers and occupants.
 - 2. Flooring shall comply with the following Criteria:
 - a. Carpet shall meet the testing and product requirements of the Carpet and Rug Institute Green Label program.

- b. Carpet adhesive shall meet the requirements of IEQ Credit 4.1 Adhesives and Sealants
 - c. Hard surface flooring shall meet the requirements of the FloorScore standards, documented with Testing by an Independent Third Party. Tile, without integral organic-based coating and sealant, qualify for Credit, without IAQ testing requirements.
 - d. Concrete floor finishes, such as sealers shall meet the requirements of the South Coast Air Quality Management District (SCAQMD) Rule #113, Architectural Coatings, rules in effect on January 1, 2004.
 - e. Tile setting adhesives and grout shall meet the requirements of the South Coast Air Quality Management District (SCAQMD) Rule #1168, VOC limits.
- K. Indoor Environmental Quality - Credit 4.4: Low Emitting Materials – Composite Wood and Agrifiber Products
- 1. Reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of installers and occupants.
 - 2. Composite wood and agrifiber products used on the interior of the building shall contain no added urea-formaldehyde resins.
 - 3. Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies shall contain no added urea-formaldehyde resins.
 - 4. Particleboard, medium density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates, and door cores are considered composite wood and agrifiber products.

3.03 General Implementation

- A. Check LEED Online to verify specific credit documentation required.
- B. Using 2009 Edition, LEED Reference Guide for Green Building Design and Construction, coordinated with Construction Documents, establish progress, status.
- C. Align Credits with Project Schedule to ensure requirements shall be met, with specified procedures, materials, and/or products. Incorporate reasonable ‘float’ in schedule to provide for potential adjustments in procedures, materials, or products.
- D. Contractor shall comply with Submittal procedures stipulated in Section 01 33 00, regarding review of Submittals, Product Data, and Shop Drawings prior to transmittal to Architect. Transmittal to Architect signifies that the Contractor has reviewed the submittal and has confirmed that the procedures, materials, or products will comply, or assist in compliance, with LEED Criteria.
- E. Provisions for Substitutions in Section 01 33 00 shall not relieve the Contractor of responsibility to meet the LEED Credit criteria, as shown, specified, and/or stipulated in the LEED Reference Guide, and/or LEED Online.

3.04 Credit Implementation

- A. Sustainable Sites - Prerequisite 1: Construction Activity Pollution Prevention
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Confirm focus is on Erosion and Sedimentation Control.
 - 3. Establish and document criteria for controlling airborne dust.
 - 4. Develop Action Plan for compliance
 - 5. Assemble photographic documentation of criteria and response
- B. Materials and Resources - Credit 2: Construction Waste Management
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Prior to commencing ‘deconstruction,’ prepare Action Plan for diversion of waste.
 - 3. Establish Measurement Plan for Documentation and consistency
 - 4. Establish and document resources and criteria for recycling and

- C. Materials and Resources - Credit 4: Recycled Content
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, recycled percentage, cost
 - 4. Review construction approach for potential recycling opportunities
- D. Materials and Resources - Credit 5: Regional Materials
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, Regional percentage, cost
 - 4. Review construction approach for additional Regional opportunities
- E. Indoor Environmental Quality - Credit 3.1: Construction Indoor Air Quality - Management Plan During Construction
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Develop a written Construction IAQ Management Plan, for use during demolition and construction.
 - 3. Maintain a detailed photo log of the Construction IAQ Management Plan practices followed during construction.
- F. Indoor Environmental Quality - Credit 3.2: Construction Indoor Air Quality - Management Plan Before Occupancy
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Develop a written IAQ Management Plan and implement it after all finishes have been installed and the Building has been completely cleaned before occupancy.
 - 3. Maintain records of Indoor Air Quality prior to occupancy.
- G. Indoor Environmental Quality - Credit 4.1: Low Emitting Materials – Adhesives and Sealants
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, VOC limits, quantity
 - 4. Review material compliance with required standards
- H. Indoor Environmental Quality - Credit 4.2: Low Emitting Materials – Paints and Coatings
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, VOC limits, quantity
 - 4. Review material compliance with required standards
- J. Indoor Environmental Quality - Credit 4.3: Low Emitting Materials – Flooring Systems
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, VOC limits, quantity
 - 4. Review material compliance with required standards
- K. Indoor Environmental Quality - Credit 4.4: Low Emitting Materials – Composite Wood and Agrifiber Products
 - 1. Verify specific credit documentation required, on LEED Online.
 - 2. Review procurement schedule, aligned with construction schedule
 - 3. Develop tracking tool: Materials, use of urea-formaldehyde, quantity
 - 4. Review material compliance with required standards

3.05 Compliance Documentation

- A. Sustainable Sites - Prerequisite 1: Construction Activity Pollution Prevention
 - 1. Upload description, and photos of FEMA compliant Perimeter Flood Wall, with explanation how this will preclude run-off.
 - 2. Track and photograph dust mitigation
- B. 1. Verify specific credit documentation required, on LEED Online.

END OF SECTION

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PART 1 GENERAL

1.01 Scope

- A. Furnish all labor, equipment, tools, and incidentals required and deconstruct, modify, remove and dispose of work shown on the Drawings and as specified herein.
- B. The Project Site is, and will remain, a working, operation facility. Removal, tearing or knocking down of structures i.e. "gross demolition" to accommodate new construction could have detrimental impact to ongoing operations. Deconstruction, and removal of existing structures, equipment, and materials with care, and consideration of adjacent structures, equipment, and below grade utilities and infrastructure is intended to minimize the potential for accidental damage to those elements intended to remain in place, serviceable and operational.
- C. As indicated in 01 11 00 Summary of Work, portions of the FEMA required Perimeter Flood Wall (Protection from Flooding), are located immediately adjacent to the WORK area and is to be integrated into the new work. Per 01 71 33 Protection of Adjacent Construction, existing structures shall be protected and care shall be exercised to avoid damaging the existing work
- D. As indicated in 01 11 00 Summary of Work, the Site is located immediately adjacent to environmentally sensitive wetlands. Per 01 57 19 Temporary Controls, care shall be exercised to avoid impacting the wetlands and the work shall be monitored for compliance with environmental protection requirements.
- E. Leadership in Energy and Environmental Design (LEED) Certification is being pursued for this facility. The Contractor shall assist in achieving LEED Certification and shall bear primary responsibility for designated 'Construction' Credits. The first is a 'Prerequisite,' meaning it is compulsory. The intent of the Prerequisite is to reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation. This is particularly applicable to deconstruction. Another is an elective credit, that is applicable to deconstruction. The primary goal of this credit is to, 'Divert demolition and construction debris from disposal in landfills and incineration facilities, by redirecting, recycling, and/or recovering usable resources. The Contractor is responsible for implementation of these credits, per Section 01 81 13 Sustainable Design Requirements.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Comply with submittal procedures stipulated in Section 01 33 00

- A. Submit proposed deconstruction and modifications approach, for review, prior to the start of work. Include the coordination of service and utility shutoffs and/ or capping as required.

- B. Contractor shall complete modifications necessary to bypass equipment and structures that may be impacted, prior to commencing deconstruction. Contractor may request review of the modifications, by the District, the Architect, and/or the Architect's Consultants, prior to commencing deconstruction. Such a review shall not relieve the Contractor of responsibility for the work.

1.04 Definition

The terms Demolish, Demolition, Deconstruct, and Deconstruction, may be used interchangeably in the Contract Documents. The intent is for required removal, or "deconstruction", of structures to be accomplished safely, and with due consideration of adjacent equipment, systems, or structures that are to remain in place, serviceable and operational.

1.05 Standards

No structure shall be modified, demolished, or deconstructed without a permit, where required. the Agency Having Jurisdiction.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 Scheduling

- A. Prosecute the Work to avoid potential interference or impact to ongoing operations.
- B. Notify the District a minimum of two (2) Business days prior to commencement of critical deconstruction activities, to allow for removal of any District, or Operations Staff, property. Contractor shall not undertake any modifications or deconstruction without the specific acknowledgement of the District.

3.02 Existing Conditions

- A. District shall assume no responsibility for the actual condition of the structures to be demolished.
- B. Conditions existing at the time of inspection for bidding purposes shall be maintained by the District in as much as practicable. Structural variations may occur prior to the start of deconstruction.

3.03 Protection

- A. Modifications and Deconstruction shall be executed to preclude damage existing structures, equipment or adjacent features, and to not infringe or impact ongoing District operations.
- B. Erect and maintain safety barriers, or other required protective devices to prevent entry by unauthorized personnel into potentially hazardous deconstruction areas.
- C. See Section 01 81 13.302.A. LEED Prerequisite 1: Construction Activity Pollution Prevention.

3.04 Structural

- A. Remove structure(s) to the lines and grades shown in the documents, unless otherwise directed.
 - 1. Demolish concrete and masonry in small sections.
 - 2. Remove structural framing members and lower to ground by means of hoists, derricks, or other suitable methods.
 - 3. Break up and remove foundations and slabs-on-grade, to extent indicated.
 - 4. Locate demolition equipment throughout the structure and remove material such that excessive loads are not imposed onto supporting walls, floors or framing.
- B. Following removal of structural elements shown, or scheduled, to be removed in the documents; the junction point shall be finished or repaired so as to leave only even finished surfaces exposed.

3.05 Mechanical

- A. Mechanical removals shall consist of dismantling and removing existing systems, piping, pumps, motors, equipment and other appurtenances as specified, shown, or required for the completion of the work. It shall include cutting, capping, and plugging as required.
- B. Existing water, gas, fuel, and other piping not required for the new work shall be removed where shown or where it will interfere with new work. Piping shall be closed, emptied, purged and made safe prior to removal or capping.
- C. When underground piping is to be altered, relocated, or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place unless it interferes with new work or is shown or specified to be removed. Waste and vent piping shall be removed to points shown. Pipe shall be plugged with cleanouts and plugs. Where vent stacks pass through an existing roof that is to remain, they shall be removed and the hole in the roof properly patched and made watertight.
- D. Changes to potable water piping shall be made in conformance with applicable codes and under the same requirements as other underground piping.

3.06 Electrical

- A. Electrical removals shall consist of dismantling and removing existing components, equipment, and other appurtenances as specified, shown, or required for the completion of the work.
- B. All existing electrical equipment and fixtures to be removed shall be removed with such care as may be required to prevent unnecessary damage, to keep existing systems in operation and to maintain the integrity of the grounding systems.
- C. Exposed conduits and their supports shall be disassembled and removed from the site. Repair all areas of work to prevent rust spots on exposed surfaces.
- D. Where shown or otherwise required, wiring in the underground duct system shall be removed. Verify the function of all wiring before disconnection and removing it. Ducts which are not to be reused shall be plugged where they enter buildings and made watertight.
- E. Where shown, direct-burial cable shall be abandoned. Such cable shall be disconnected at both ends of the run. Where it enters a building or structure the cable shall be cut back to the point of entrance. All opening in buildings for entrance of abandoned direct-burial cable shall be patched and made watertight.

3.07 Completion

- A. All materials and equipment removed from existing work shall become the property of the Contractor, except for those which the Owner has identified to be retained. All materials and equipment identified by the District to remain shall be carefully removed, so as not to be damaged, cleaned and stored on the site in a protected place as directed.
- B. Dispose of all demolition materials, equipment, debris and all other items not marked by the Owner to remain, off the site and in conformance with all existing applicable laws and regulations
- C. Measures shall be taken to control dust and dirt during deconstruction. Do not use water when hazardous conditions may be created.
- D. Remove debris resulting from demolition operations as it accumulates. Upon completion of deconstruction, premises shall be left clean, neat and orderly.
- E. See Section 01 81 13.302.B. LEED, Materials and resources, Credit 2, Construction Waste Management. The intent of this LEED Credit is to divert demolition and construction debris from disposal in landfills and redirect recyclables and recovered reusable materials to appropriate sites.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

Furnish all labor, equipment, materials, and incidentals required, and install cast-in-place concrete and accessories as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

No structural concrete shall be placed until concrete design mixes, concrete placement procedures, construction joint locations and reinforcing steel placement have been reviewed by the structural engineer, and architect as applicable.

Shop drawings showing reinforcing details, including steel sizes, laps, spacing and placement and details construction joints, slab depressions, openings, curbs, and any other detailing required to complete the work shall be submitted for review prior to fabrication.

Contractor shall comply with procedures stipulated in Section 01 33 00, in submitting the following:

- A. Design Mixtures: For each concrete mixture specified
- B. Integral color mix, physical sample
- C. Steel Reinforcement Shop Drawings: Include fabrication, bending, and placement details
- D. Material Certificates

1.04 Standards

Where one of the following standards is referenced, the revision in effect at bid opening shall apply. Alternatively, apply the latest, most stringent, requirements of the specifications and standards.

- A. ACI 117-10 – Specifications for Tolerances for Concrete Construction and Materials
- B. ACI 301 - Specification for Structural Concrete
- C. ACI 315 - Details and Detailing of Concrete Reinforcement
- D. ACI 318 - Building Code Requirements for Structural Concrete
- E. ACI 336.1 - Specification for Drilled Piers
- F. ACI SP-066 (04) - Detailing Manual
- G. ASTM C33 - Specification for Concrete Aggregates
- H. ASTM A36 - Specification for Smooth Steel Bars
- I. ASTM C39 - Standard Test Method for Concrete Specimens.
- J. ASTM C94 - Specification for Ready Mixed Concrete
- K. ASTM C143 – Standard Test Method for Concrete Slump
- L. ASTM C150 - Specification for Portland Cement

- M. ASTM E329 – Specification for Inspection Agencies
- N. ASTM C404 – 11 - Standard Specification for Aggregates for Masonry Grout
- O. ASTM A615 - Specification for Carbon-Steel Reinforcement Bars
- P. ASTM A706 - Specification for Low-Alloy Steel Reinforcement Bars
- Q. ASTM A1064 - Specification for Steel Wire and Welded Wire Reinforcement
- R. ASTM C 1077 – Standard Practice for Agencies Testing Concrete
- S. ASTM E1155-20 - Standard Test Method for FF Floor Flatness and FL Floor Levelness Numbers
- T. AWS D1.4 - Structural Welding Code

1.05 Quality Measures

- A. Concrete mixes shall be tested by an independent testing laboratory engaged by, and at the expense of, the Contractor. Methods of testing shall comply with applicable ASTM methods.
- B. District shall pay for required Inspection and Laboratory Testing services, provided by an accredited independent agency acceptable to the Structural Engineer and Authorities Having Jurisdiction, as applicable. Inspection, Field and Laboratory Testing shall comply with applicable methods and procedures.

1.06 Delivery, Storage, and Handling

- A. Deliver, store, and handle steel reinforcement to prevent bending and damage. Handle and protect reinforcing steel from physical damage.
- B. Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Materials

- A. Facing Materials
 - 1. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Steel Reinforcement
 - 1. Reinforcing Bars: ASTM A 615, Grade 60 deformed
 - 2. Low-Alloy-Steel Reinforcing Bars: ASTM A 706, deformed, if required
 - 3. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064, plain, fabricated from as-drawn steel wire into flat sheets
 - 4. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064, flat sheet

5. Bar Supports: Devices specifically manufactured for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Acceptable Bar Supports shall be in compliance with CRSI's "Manual of Standard Practice."
- C. Concrete Materials
1. Portland Cement: ASTM C150, Type I, gray
 2. Normal-Weight Aggregates: ASTM C 33, graded
 3. Water: ASTM C 94 and potable
- D. Admixtures shall not be used without prior written approval from Structural Engineer. No chlorides and/or admixtures containing chlorides shall be used in any concrete.

2.03 Related Materials

- A. Waterstops: Virgin, Polyvinyl Chloride (PVC) waterstops at control, expansion and/or construction joints to create a continuous diaphragm and prevent fluid migration.
- B. Sand Cushion: Washed inert natural sand
- C. Vapor Retarder: Minimum 10 mil polyethylene sheet.
- D. Liquid Membrane-Forming Curing Compound: Lithium based, no VOC, liquid based concrete cure, spray applied at 400 square feet per gallon.
- E. Waterproofing/ Densifier: Water based lithium quartz waterproofing, densifier for treatment of slabs.

2.04 Concrete Design Mixtures

- A. Provide normal-weight concrete with 28-day compressive strengths as indicated:
1. Footings: 3000 psi
 2. Drilled Piers: 3000 psi
 3. Slabs on Grade: 4000 psi
 4. Building Walls: 4000 psi
 5. Equipment Pads: 4000 psi
- B. Concrete, for slabs on grade, shall have a maximum water-cementitious material ratio of 0.45.
- C. Concrete, at the point of delivery, shall have a 4" slump as determined by ASTM C143.

2.05 Foundation Design

- A. Foundation design is based on recommendations in Geotechnical Study, Number 04.62140143, dated April 2015 prepared by Fugro Consultants, Inc. for Goleta West Sanitary District.
- B. Shallow Foundations: Footings shall bear on undisturbed soil with a minimum allowable bearing capacity of 1,500 PSF, at a minimum depth of 1'-6" below finished grade, for Class of Materials – 5., per Table 1806.2, Presumptive Load-Bearing Values, of the 2016 California Building Code, Part 2, Volume 2., Chapter 18- Soils and Foundations.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Examine, existing conditions, adjacent surfaces, and materials.
1. Establish that the site and work surfaces are secure, clean and free of any issue that would preclude installation.
 2. Verify that locations and dimensions are as indicated on the drawings, and ready to receive the installation.
 3. All subgrades and excavations shall be inspected prior to placing reinforcing and concrete. Notify the Architect when the subgrades and excavations are ready for inspection.

- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.
- D. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

3.02 Installation, Preparation

- A. Locate and protect existing utilities to remain during and after construction.
- B. Remove abandoned foundations and utilities which interfere with new construction unless otherwise indicated.
- C. Subgrade shall be prepared, fill shall be compacted, and moisture controlled as specified and as stipulated in the geotechnical report.
- D. Where new concrete is to be cast against existing concrete, the contact surface shall be roughened and thoroughly cleaned and coated with a bonding agent, unless other direction is indicated.

3.03 Installation, Drilled Piers

- A. Pier lengths noted on the drawings are for estimating purposes only. Final bearing elevations are to be determined in the field. Each drilled pier shall be inspected for proper diameter, elevation, design bearing material and reinforcing before placing any concrete. For allowable loads on drilled piers, see drilled pier schedule, on drawings.
- B. Pier bottoms shall be smooth, dry, and free of all loose material prior to placement of concrete.
- C. Contractor shall provide safe access for personnel to inspect the bottom of excavations.
- D. Contractor shall verify the depth of the pier prior to cutting reinforcement cages. Vertical pier reinforcing shall be spliced with a Class B tension lap splice. Reinforcing steel cages shall be adequately supported to provide concrete cover and clearances indicated on the drawings.
- E. Contractor shall make accurate measurements of the depth of the bearing strata and the distance of penetration into the bearing strata. Pier log shall be submitted to the engineer of record indicating depth of piers and the depth of penetration.
- F. Steel casings shall be used where needed to prevent earth from falling into the excavation and to prevent ground water from infiltrating the excavation. A five (5') foot head of concrete must be maintained above the bottom of the casing, to allow removal of the excavation casings.
- G. Contractor shall fill Pier excavations, within the timeframe specified in the Geotechnical Report. Contractor shall be responsible for re-drilling any excavation left unfilled beyond the timeframe stipulated. Contractor shall be responsible for safety around open pier excavations.
- H. Filled piers with soil intrusions or cold joints will not be accepted. Contractor shall plan, coordinate and place concrete, in piers, to preclude these occurrences. Obstructions shall not reduce the diameter of a drilled pier. Obstructions shall be removed prior to concrete placement.
- I. Concrete may free fall the depth of the drilled piers provided the concrete is not obstructed by any reinforcing steel or connections. Concrete placed in this manner shall not require vibration.
- J. Contractor shall maintain a drilled pier placement plan including information on earth excavation, rock excavation, steel casing, probe hole drilling and dewatering operations. This information shall be submitted for approval prior to the commencement of concrete placement.

3.04 Installation, Formwork

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Construct forms to be tight enough to prevent loss of concrete and configured for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, prior to reinforcement placement.

3.05 Installation, Embedded Items

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- B. Embedments (conduits, pipes, sleeves, etc.) of any material not harmful to concrete, and within limitations, shall be permitted in concrete with approval of the structural engineer.
 - 1. Aluminum embedments shall be coated to prevent aluminum-concrete reaction.
 - 2. Embedments shall not:
 - a. Impair significantly the strength of the construction
 - b. Be larger, in outside dimension, than 1/3 the overall thickness of slab, wall, or beam in which they are embedded
 - c. Be spaced closer than three (3) diameters or widths on center
- C. Electrical conduit shall not be placed above welded wire reinforcement in slabs on grade.
- D. Specified concrete cover for pipes, conduits, and fittings shall not be less than 1-1/2 inch for concrete exposed to earth or weather, nor less than 3/4 inch for concrete not exposed to weather or in contact with the ground.
- E. Piping and conduit shall be fabricated and installed to preclude cutting, bending, or displacement of reinforcement. Do not cut or weld reinforcing steel without prior written approval of Structural Engineer.

3.06 Installation, Reinforcing Steel

- A. Reinforcing steel shall conform to ASTM A615, Grade 60. Reinforcing steel that is to be welded shall conform to ASTM A706, Grade 60.
- B. Field bending of reinforcing shall be performed cold. Heating of bars shall not be permitted.
- C. Unless noted otherwise, "continuous" reinforcement shall have minimum tension lap of Class "B" per ACI 318 at splices and shall hook at discontinuous ends. Reinforcement specified as continuous shall be continuous through columns, piers, foundation caps or other intersecting elements. Alternatively, reinforcement specified as continuous shall be lap spliced with a Class "B" lap splice to dowels in the intersecting elements that develop the full yield strength of the continuous reinforcement. (*see typical details*)
- D. Lap splices in welded wire fabric in accordance with the requirements of ACI 318 but not less than 12-in. Tie the spliced fabrics together with wire ties spaced not more than 24-in on center and lace with wire of the same diameter as the welded wire fabric. Offset splices in adjacent widths to prevent continuous splices.
- E. Reinforcement shall be continuous across joints and around corners. Splice Bars shall be provided in accordance with the latest edition of ACI 315. Corner Bars shall be provided at all wall corners, equal to the horizontal wall reinforcement.
- F. Prior to placing reinforcing steel, clean loose mill scale and rust, mud, dirt, grease, oil and other coatings, that reduce or destroy bond.

- G. Coat reinforcement, that will be exposed for a considerable length of time after being placed, with a heavy coat of cement grout.
- H. Do not cover any reinforcing steel with concrete until the amount and position of the reinforcement has been checked and the Contractor has been given permission to proceed.

3.07 Installation, Joints

- A. Joints not shown or indicated shall be located to least impair the strength and appearance of the structure. Horizontal joints are not permitted in concrete except where they normally occur. Vertical joints shall occur only at locations accepted by structural engineer.
- B. Unless shown otherwise, provide joints perpendicular to main reinforcement. Continue reinforcing steel through the joint, or as indicated.
- C. At all construction joints and at concrete joints indicated to be "roughened", uniformly roughen the surface of the concrete to a full amplitude (distance between high and low points and side to side) of ¼" with chipping tools to expose a fresh face. Thoroughly clean joint surfaces of loose or weakened materials and prepare for bonding. At least two hours before, and again just prior to, new concrete being placed, saturate the joints with water. After glistening water disappears, coat joints with neat cement slurry mixed to the consistency of heavy paste. The surfaces shall receive a coating at least ⅛" thick, scrubbed-in by means of stiff bristle brushes. Deposit new concrete before the neat cement dries.

3.08 Installation, Water Stops

Install water stops in construction joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed water stops during progress of the Work. Field fabricate joints in water stops according to manufacturer's written instructions.

3.09 Installation, Vapor Retarder

Place a minimum of 2" of clean, washed, sand, on a minimum of 6" fine aggregate base above prepared base grade or as stipulated in the Geotechnical Report. Install Vapor Retarder, with edges positively tape sealed, on sand base and cover with a minimum of 2" of clean, washed, sand. New concrete slab is to be placed over sand base.

3.10 Concrete Placement

- A. Prior to commencing concrete placement, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Consolidate concrete with mechanical vibrating equipment per ACI 301, to ensure concrete is thoroughly worked around reinforcement, other embedded items and into corners
 - 2. Maintain reinforcement in position on chairs during concrete placement
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations

3.11 Finishing of Concrete Slabs and Floors

- A. Following placement of concrete slabs and initial screeding to desired elevation; begin initial finishing float to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and straightening until surface is left with a uniform, smooth, granular texture.

- C. Steel Trowel Finish: Following float finish, trowel and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
 - 1. Slabs to have floor coverings, shall have defects, and/or raised areas, of significant magnitude removed by grinding.
 - 2. Slabs that will be exposed shall be finished to minimize defects. Visible imperfections shall be removed by grinding of limited areas. If grinding is deemed necessary; grinding will be required between joints, in both directions so that "burnishing" of limited areas is not perceived.
 - 3. Slab drying must proceed naturally and not be artificially hastened. Edges at construction joints to be lightly tooled, with care exercised along bulkheads, not to depress slab edges.
- D. Sand Float Finish: While the concrete is "green," wet the surface and rub using a wood float. Rub fine sand into the surface until a uniform color and texture are produced, from edge to edge.
- E. Immediately following completion of Finish, spray apply Lithium based, no VOC, liquid based concrete cure, at 400 square feet per gallon, or per manufacturer's written directions.

3.12 Floor Flatness

- A. Floors to be surfaced with Tile shall conform to the following surface tolerances:
 - 1. Floor Flatness Number: 50
 - 2. Floor Levelness Number: 33

3.13 Field Testing and Quality Control

- A. District shall engage and pay for requisite Inspections, Special Inspections, and Laboratory Testing.
- B. Qualified Inspecting and Testing Agencies shall be acceptable to Consulting Engineers.
- C. Required Inspections, Testing and Special Inspections shall be as specified or enumerated in Special Inspection Matrices on drawings.

3.14 Protection and Cleaning

- A. Protect finished slabs until fully cured and serviceable. Protect from stains and damage throughout the course of construction.
- B. Contractor shall be responsible for repairing or replacing stained or damaged surfaces resulting from construction activities, prior to project acceptance.
- C. Repairs of surfaces, intended to be exposed, shall be made to appear as uniform as possible with undamaged surfaces. This may require replacement of entire slab segments between joints. Repairs shall be made at no additional cost to the District.
- D. In anticipation of project review for acceptance, protective coverings at all floor areas shall be removed and disposed of. Floor areas shall be broom cleaned and wet mopped, to remove dust.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install new Concrete Masonry Units (CMUs) as shown on the drawings and as specified herein, to match Concrete Masonry Units used in Buildings, currently on the Project Site.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

- A. Contractor shall comply with procedures stipulated in Section 01 33 00, in submitting the following:
 - 1. Concrete Masonry Units: Manufacturer, Shape, Size, Finish
 - 2. Design Mixtures: For each Mortar and Grout mixture specified
 - 3. Steel Reinforcement Shop Drawings
 - 4. Material Properties and Test Results
 - 5. Miscellaneous Items: Insulation, Joint filler, and Accessories

1.04 Samples

Submit samples sufficiently in advance of scheduled installation to allow time for review and, if necessary, re-submittal if the original samples are found not to conform to the contract requirements. Submit samples of the following in sizes and quantities stated:

- A. Concrete Masonry Units (CMU): 4"x4" maximum, Three (3) samples of each finish.

1.05 Standards

- A. ACI 530 - Building Code Requirements for Masonry Structures
- B. ACI 530.1 - Specification for Masonry Structures
- C. ASTM A36 – Standard Specification for Structural Steel
- D. ASTM A67 – Standard Specification for Steel Tie Plates
- E. ASTM A82 – Standard Specification for Steel Wire Reinforcement
- F. ASTM A153 – Standard Specification for Zinc Coating on Steel
- G. ASTM A307 – Standard Specification for Carbon Steel Bolts
- H. ASTM A615 – Standard Specification for Deformed Steel Reinforcement Bars
- I. ASTM A653 – Standard Specification for Steel Galvanization
- J. ASTM A884– Standard Specification for Epoxy Coated Steel Wire Reinforcement
- K. ASTM A951 – Standard Specification for Steel Wire for Masonry Joint Reinforcement

- L. ASTM A1064 – Standard Specification for Steel Welded Wire Reinforcement
- M. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units
- N. ASTM C140 - Standard Test Method for Sampling and Testing Concrete Masonry Units
- O. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar
- P. ASTM C150 - Standard Specification for Portland Cement
- Q. ASTM C270 - Standard Specification for Mortar for Unit Masonry
- R. ASTM C476 - Standard Specification for Grout for Unit Masonry
- S. ASTM C1019 - Standard Test Method for Sampling and Testing Grout
- T. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms
- U. ASTM C1714 - 16 - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry
- V. ASTM C1586 - Standard Guide for Quality Assurance of Mortars
- W. TMS 402/ 602 - Building Code Requirements for Specification for Masonry Structures

1.06 Quality Measures

- A. Preconstruction Testing: District will engage, and pay for, a qualified Independent Testing Agency to perform the following preconstruction testing:
 - 1. Compressive Strength of Masonry: Unit, Mortar, and Grout specified, per TMS 602
 - 2. Schedule masonry procurement sufficiently in advance to allow for prism testing

1.07 Delivery, Storage, and Handling

- A. Deliver Concrete Masonry Units and accessories to Project Site, banded on pallets and/or in original containers labeled with manufacturer's name, product brand name and type.
- B. Handle and protect materials from physical damage
- C. Store off the ground and keep free of contamination
- D. Materials that are damaged or defective shall be replaced at the Contractor's expense
- E. Materials in opened or broken containers, or in packages showing watermarks or other evidence of damage, shall not be used and shall be removed from the site

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

Subject to compliance with requirements, provide products from the following manufacturer, or equal:

- A. Air Vol Block, Inc.
- B. Angelus Block Co., Inc.
- C. Desert Block Co., Inc.
- D. ORCO Block & Hardscape

2.03 Concrete Masonry Units

- A. Contractor shall provide Concrete Masonry Units with nominal face size and bed dimension as shown on the Drawings. Unit sizes shall include, but are not limited to:
 - 1. 8" wide x 8" high x 8" long
 - 2. 8" wide x 8" high x 16" long
 - 3. 12" wide x 8" high x 8" long
 - 4. 12" wide x 8" high x 16" long
 - 5. 1 $\frac{5}{8}$ " wide x 8" high x 8" long (soap)
 - 6. 1 $\frac{5}{8}$ " wide x 8" high x 16" long (soap)
- B. Finishes shall include:
 - 1. Standard "gray" Concrete Masonry Units
 - 2. Single Score, Concrete Masonry Units, with Integral Color to match existing
 - 3. Single Score, Concrete Masonry Units, with Integral Color and Ground Face Finish
- C. Concrete Masonry Units shall have an Integral Water Repellant. Completed walls shall be coated with an External Water Repellant, recommended by the Manufacturer of the concrete masonry.
- D. Provide special shapes, as may be required, including, but not limited to:
 - 1. Solid
 - 2. "U" shaped for lintels/ bond beams
 - 3. Corner
 - 4. End Caps
 - 5. "Soaps"
 - 6. Insulated Shapes
- E. Design Criteria:
 - 1. Conform to ASTM C90, medium weight, Type I
 - 2. Design compressive strength $f' m = 2000$ psi.

2.04 Mortar and Grout Materials

- A. Cementitious Materials:
 - 1. Portland cement shall conform to ASTM C150, Type I. Masonry cements, mortar cements, and plastic cement shall not be used.
 - 2. Cementitious materials for mortar and grout shall not contain epoxy resins and derivatives, phenols, asbestos fiber, or fireclays.
 - 3. Mortar and Grout shall have an Integral Water Repellant
- B. Aggregates:
 - 1. Sand shall be clean, durable particles, free from injurious amounts of organic matter, dust, lumps, shale, alkali, or surface coatings
 - a. Sand for mortar shall conform to ASTM C144
 - b. Sand for grout shall conform to ASTM C404, No. 2
 - 2. Coarse aggregate for grout shall conform to ASTM C404, No. 8.

- C. Water:
 - 1. Shall be potable, free from deleterious amounts of oils, acids, alkalis, and/or organic matter.

2.05 Mortars

- A. Mortar shall develop a minimum compressive strength of 1,800 psi at 28 days, in accordance with ASTM C270
 - 1. Admixtures shall not be used in the Mortar mix
 - 2. Mix Mortar in accordance with the requirements of ACI 530.1
 - 3. Mortar shall include an Integral Color
 - 4. Mortar shall include an Integral Water Repellent

2.06 Grout

- A. Grout shall develop a minimum compressive strength of 2,500 psi at 28 days, in accordance with ASTM C1019
 - 1. Admixtures shall not be used in the Mortar mix
 - 2. Mix Mortar in accordance with the requirements of ACI 530.1

2.07 Accessories

- A. Install PVC Control Joints where shown on the Drawings
- B. Install Neoprene Expansion Joints where shown on the Drawings
- C. Install brake metal and/or flexible, composite, flashing as shown on the Drawings. Flashing shall be properly dammed at ends and joints shall be sealed per manufacturer instructions.

2.08 Reinforcing Steel

- A. Reinforcing Bars: ASTM A 615, Grade 60 deformed
- B. Masonry Joint Reinforcement: ASTM A951 Maximum spacing of cross wires in ladder-type and points of connection of cross wires of truss-type joint reinforcement shall be 16 inches
- C. Anchors, ties, and accessories:
 - 1. Plate and bent-bar anchors: ASTM A36
 - 2. Sheet-metal anchors and ties: ASTM A1008
 - 3. Wire mesh ties: ASTM A185
 - 4. Wire ties and anchors: ASTM A82
 - 5. Headed anchor bolts: ASTM A307, Grade A.
- D. Coatings for corrosion protection: Unless otherwise required, protect carbon steel joint reinforcement, ties, and anchors from corrosion by galvanizing or epoxy coating in conformance with the following minimums:
 - 1. Mill galvanized coatings:
 - a. Joint reinforcement: ASTM A641 (0.1 oz./ft²).
 - b. Sheet metal anchors and ties: ASTM A653 Coating Designation G60.
 - 2. Hot-dipped galvanized coatings:
 - a. Joint reinforcement, wire ties, and wire anchors: ASTM A153 (1.50 oz./ft²).
 - b. Sheet metal anchors and ties: ASTM A153 Class B.
 - 3. Epoxy coatings:
 - a. Joint reinforcement: ASTM A884 Class A Type 1 - ≥ 7 mils.
 - b. Wire ties and anchors: ASTM A899 Class C - 20 mils.
 - c. Sheet metal anchors and ties: 20 mils per manufacturer's recommendations
- E. Install miscellaneous items to be set in masonry for which placement is not specifically provided under separate Divisions. Cooperate with other trades whose work is to be coordinated with the work under this Section.

1. Do not embed pipes or electrical conduits in masonry unless their location has been detailed on the Structural Drawings. Pipes or conduits placed in unfilled cells of hollow unit masonry will not be considered as embedded. Sleeves through masonry shall not be placed closer than 3 diameters, center to center, nor shall they be placed through reinforced courses or cells.
2. Do not place dissimilar metals in contact with each other.
3. Do not insert through-wall flashing or other elements which stop bond in masonry joints unless approved by the Structural Engineer.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Examine existing conditions, adjacent surfaces, and materials.
 1. Establish that the surfaces are secure, clean and free from any damage that would preclude installation of the work
 2. Verify that locations and dimensions are as indicated on the drawings, and ready to receive the installation.
 3. Verify foundations are constructed within a level alignment tolerance of $\pm \frac{1}{2}$ "
 4. Verify that reinforcing dowels are positioned in accordance with Structural criteria
 5. Do not begin installation until unsatisfactory conditions have been rectified
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.
- D. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

3.02 Installation, Preparation

- A. All masonry construction shall be in accordance with ACI 530 "Building Code Requirements for Masonry Structures" and ACI 530.1 "Specification for Masonry Structures".
- B. Arrange material pallets to facilitate a mixed selection of material for installation that will result in a uniform blend of colors and textures in the finished work.

3.03 Installation, General

- A. Concrete Masonry Units shall be laid in running bond, with full stretchers, unless otherwise indicated.
- B. Contractor shall exercise care to maintain vertical alignment of joints and single score line on exposed face of units. Intent is for vertical and horizontal joint lines to create a grid of 8" x 8" units.
 1. Both vertical and horizontal joints shall be maintained uniform in spacing
 2. Joints shall be 3/8-inch, uniform in both directions.
- C. Where Concrete Masonry "Soaps" are used the unit and the back-up structure shall be well mortared, to ensure that the "Soaps" are fully adhered. Epoxy mortar may be required. Follow Industry standards.
- D. Where Concrete Masonry "Soaps" are used, align face of Concrete Masonry Units above, with the face of the "Soaps."

- E. All masonry slots, chases, or openings required for the proper installation of the work of other sections shall be constructed as indicated on the Drawings or in accordance with information furnished before the work is started at the points affected. No chase shall be cut into any wall constructed of hollow units after it is built, except as directed and approved by the Engineer.

3.04 Installation, Reinforcement

- A. Place reinforcement as detailed on the drawings. Install reinforcing steel, wall ties, and anchors in accordance with TMS 602 and ACI 530.1.
- B. Support and fasten reinforcement to prevent displacement beyond specified tolerances during construction and grouting operations.
- C. Completely embed reinforcing bars in grout. Maintain clear distances between reinforcement and any interior face of masonry unit or formed surface, but not less than $\frac{1}{4}$ inches for fine grout, or $\frac{1}{2}$ inches for coarse grout.
- D. Maintain minimum cover over reinforcing steel, where masonry is:
 - 1. Exposed to weather - 2 inches for bars larger than No. 5 and $1\frac{1}{2}$ inches for No. 5 or smaller.
 - 2. Not exposed to weather - $1\frac{1}{2}$ inches
- E. Embed joint reinforcement with minimum $\frac{5}{8}$ " inches cover to faces exposed to weather or earth, and $\frac{1}{2}$ inches elsewhere.
 - 1. Provide minimum 6 inches lap splices and ensure that all ends of longitudinal wires are embedded in mortar at laps.
- F. Place reinforcing bars in walls to a tolerance of $\pm \frac{1}{2}$ inches when the distance from the centerline of reinforcing bars to the opposite face of masonry, is equal to 8 inches or less, ± 1 inch where the distance is equal to 24 inches or less but greater than 8 inches, and $\pm 1\frac{1}{4}$ inches where the distance is greater than 24 inches.
- G. Foundation dowels that interfere with unit webs are permitted to be bent to a maximum of 1 inch horizontally for every 6 inches of vertical height.
- H. Install wall ties as detailed on the drawings and in accordance with TMS 602 and ACI 530.1.
- I. Install anchor bolts as detailed on the drawings and in accordance with TMS 602 and ACI 530.1.
- J. Embed headed and bent-bar anchor bolts in grout. Anchor bolts of $\frac{1}{4}$ inch or less may be placed in mortar bed joints at least $\frac{1}{2}$ inches. in specified thickness.
- K. Maintain clear distance between anchor bolts and any face of masonry unit or formed surface of at least $\frac{1}{4}$ inch when using fine grout, and of at least $\frac{1}{2}$ inches when using coarse grout.
- L. Maintain a clear distance between parallel anchor bolts not less the diameter of the anchor bolt, nor less than 1 inch.
- M. Vertical reinforcement size and spacing as shown on plan and in masonry wall schedule with one bar minimum at all corners, intersections, wall ends, beam bearing, jambs, and each side of control joints.
- N. Provide standard weight (no. 9 gage wire) dur-o-wall or dur-o-wire ladder type joint reinforcing. Locate horizontal joint reinforcement 16 inches on center vertically. Provide additional horizontal joint reinforcement at the top of all foundations and in the two joints immediately above and below all openings. Extend joint reinforcement a minimum of 24 inches beyond the opening on each side. Lap reinforcement a minimum of 6 inches.

- O. Horizontal reinforcement (unless noted otherwise) shall be 2- #4 (6-inch wall) and 2- #5 (8-inch and 12-inch wall) bars in minimum 8-inch deep grouted continuous bond beam at roof and elevated floor lines. Place #4 (6-inch wall) and #5 (8-inch and 12-inch wall) bar in minimum 8-inch deep grouted continuous bond beam at top of parapet or top of free-standing wall. Place these bars continuous through control joint. Wrap mastic tape for 1'-6" each side of control joint. Provide bent bars to match horizontal bond beam reinforcing at corners and wall intersections to maintain bond beam continuity. Unless noted otherwise, lap slices shall be per lap splice schedule. Stagger alternate splices a minimum of 4'-0".
- P. Place pipes and conduits passing horizontally through masonry in steel sleeves.

3.05 Installation, Bonding, Anchors and Ties

- A. All ties and reinforcing for masonry shall be furnished and installed under this Section. Horizontal reinforcement shall be installed continuously in every other course or 16-in on center vertically.
- B. Loose steel lintels shall be furnished under Division 5 and installed under this Section. Loose lintels shall be set in a full bed of mortar and supported by solid or mortar filled hollow CMU as detailed.
- C. Corners and intersections of load-bearing masonry walls shall be bonded in each course with a true masonry bond. When erected separately, they shall be anchored with rigid steel anchors spaced not more than 2 feet apart vertically.
- D. Intersections of non-load-bearing partitions with other walls or partitions shall be tied with corrugated metal anchors at vertical intervals of not more than 16 inches or with masonry bonding in alternate courses.
- E. Masonry walls facing or abutting concrete members shall be anchored to the concrete with dovetail or wire type anchors inserted in slots or inserts built into, or attached to, the concrete. Anchors shall be spaced not more than 16-inches on center vertically and not more than 24-inches on center horizontally.
- F. Install all frames required to be set in masonry, set masonry tightly against frames, build in all frame anchors, and fill frames with mortar.
- G. Bed and grout items in contact with masonry where grouting is required. Install all anchor bolts, base plates, and seats in masonry walls, and build in all items required for the completion of the building as they apply to masonry.

3.06 Installation, Reinforced Masonry

- A. Brace the top of interior non-load bearing masonry walls terminating at the underside of floor or roof structure against out-of-plane movement in accordance with typical details.
- B. Place control joints in masonry walls, as required or where indicated on the Drawings, or such that no straight run of wall exceeds 24'-0". Control joints shall not occur at wall corners, intersections, ends, within 24 inches of concentrated points of bearing or jambs, or over openings.
- C. Horizontal joint and horizontal bond beam reinforcing shall be discontinuous through all control joints except those at steel bearing elevations and floor and roof connections.
- D. Provide reinforcement of the type, size, and spacing and at locations as indicated on the Drawings and specified herein.
- E. Concrete masonry unit walls shall be laid in such a manner as to preserve the alignment and unobstructed vertical continuity of cells. Cross webs adjacent to vertical cores that are to be filled with grout shall be fully bedded with mortar, to prevent grout leakage. Mortar fins protruding from joints shall be removed before grout is placed. The minimum clear dimensions of vertical cores to be grouted shall be 2-inches by 3-inches.

- F. Reinforcement shall be free of dirt, oil, and other materials that will adversely affect bond, and shall be straight except where bends or hooks are detailed on the plans. Reinforcement which, in the opinion of the Structural Engineer, is bent or otherwise damaged and affects its structural capacity shall not be incorporated into the Work.
- G. Bond beams and horizontal joint reinforcing shall be continuous with lapped splices as specified except at vertical expansion and control joints, or at other locations noted on the Drawings.
- H. Openings in masonry greater than or equal to 16-inches, in any direction:
 - 1. Provide a minimum of one #4 in grouted cells or bond/ lintel beams on all sides of the opening.
 - 2. Bars shall extend at least 48 bar diameters past the opening on each side.
 - 3. See lintel schedules and miscellaneous details on the Drawings for additional requirements.
- I. Reinforcing Details:
 - 1. Support and fasten masonry reinforcement to prevent displacement beyond the tolerances noted herein.
 - 2. Install horizontal wire joint reinforcement in the second bed joint above the support for masonry and thereafter at 16-inches vertical intervals and at other locations as detailed on the Drawings.
 - a. Wire joint reinforcement shall be continuous throughout the wall and around corners except that it shall not pass through vertical masonry control joints.
 - b. Lap side rods at least 12-inches at splices.
 - c. Embed joint reinforcement in masonry bed joints with not less than $\frac{5}{8}$ " inches mortar coverage.
- J. Aluminum conduits, pipes, and accessories shall not be embedded in masonry grout or mortar, unless effectively coated or covered to prevent aluminum-cement chemical reaction or electrolytic reaction between aluminum and steel.
- K. Unless otherwise noted or detailed, center wall reinforcement in block cells. Use nonmetallic bar positioners.
- L. Provide dowel reinforcement from foundation of same size and spacing as vertical wall reinforcement. Lap wall reinforcement as indicated in the typical details.

3.07 Installation, Grouting

- A. Walls shall be grouted at reinforced cells and where indicated on the Drawings. Cells containing anchors or inserts shall be fully grouted for at least 8-inches each way past the embed.
- B. Prior to grouting, the grout space shall be clean and free of mortar projections greater than $\frac{1}{2}$ inches, mortar droppings, or other foreign materials.
- C. Reinforcement shall be in place and adequately supported before commencing grouting operations. Reinforcement shall be clean and free of mortar droppings or other debris. Notify the Architect at least 24 hours prior to any grouting operations so that reinforcement placement, support, and laps may be observed before grouting. Accurately set embedded bolts with templates and hold in place to prevent movement. Provide minimum 1-inch grout space between any bolt and an adjacent masonry surface.
- D. Install barriers so that spaces designated for grouting will be filled with grout and the grout will be confined to those specific spaces. Place vertical barriers consisting of masonry units, or mortar in hollow bond beam units and grouted collar joint at maximum intervals of 30-foot to limit the horizontal flow of grout. The grouting of any section of wall between barriers shall be completed in one day with no interruptions greater than one hour.
- E. Control grout materials and water content during grouting to provide adequate fluidity for placement without segregation. Place grout within 1½ hours after the introduction of water into the mix and prior to initial set.

- F. Solidly fill with grout all reinforced cells, all cells below grade, and other cells as indicated on the Drawings. Place grout in a continuous pour to its maximum placement height using lifts of 5-foot or less and consolidating the grout after each lift.
- G. Consolidate grout by mechanical vibration before loss of plasticity, in a manner which will solidly fill the grout space and minimize voids due to absorption of water into the masonry. Reconsolidate grout by mechanical vibration after initial water loss and settlement has occurred. Consolidation should normally occur when the plasticity of the grout approaches that of stiff mortar (when a touch leaves an indentation).
- H. Complete grouting of masonry over openings in one continuous operation. Provide approved material to confine the grout in a beam where grouting occurs over ungrouted cells below. Material used for confinement shall not inhibit bond between masonry units and mortar.
- I. Use extreme care to prevent any grout or mortar from staining the face of masonry to be left exposed or unpainted. If any grout or mortar does contact the face of such masonry, it shall be removed immediately. Protect all sills, ledges offsets, etc. from grout droppings.
- J. Unfinished work shall be raked back where possible and toothed only where acceptable to the Structural Engineer. The top of partially completed work shall be covered while work is not in progress. Before leaving fresh or unfinished work, walls shall be fully covered and protected against rain, wind, frost, or the elements. Covers of waterproof paper, tarpaulins, or other means acceptable to the Engineer, shall be draped over the wall, shall extend a minimum of 2-ft down both sides, and shall be firmly held in place.
- K. For precision or textured units, except as noted below, clean masonry by dry brushing before tooling joints.
- L. At Ground Face Concrete Masonry Units, immediately remove any mortar smears, soiling, or staining with a damp sponge.
- M. Units may be laid to the maximum height of the grout pour before grouting.

3.08 Installation, Mortar

- A. Place mortar in accordance with TMS 602 and ACI 530.1.
- B. Initial bed joint shall not be less than $\frac{1}{4}$ inches or more than $\frac{3}{4}$ inch. The maximum thickness of the initial bed joint in fully grouted masonry shall not exceed $1\frac{1}{4}$ inch.
- C. Lay all head and bed joints, except initial bed joints, a nominal $\frac{3}{8}$ inch thick, unless otherwise required. Do not exceed $\frac{5}{8}$ inch thickness of bed joints.
- D. Lay hollow units with head and bed joints filled with mortar for the thickness of the face shell.
- E. Lay solid units with full head and bed joints. Do not fill head joints by slushing with mortar. Do not furrow bed joints deep enough to produce voids.
- F. Remove mortar protrusions extending $\frac{1}{2}$ inch or more into cells to be grouted.
- G. Fully mortar webs in all courses of piers, columns and pilasters, in the starting course on foundations, and when necessary to confine grout.
- H. Do not wet concrete masonry units before laying unless prior approval is obtained from the Structural Engineer.

3.09 Installation, Pointing

- A. Joints of all masonry shall be tooled in accordance with the following:

1. Wait until mortar in joints is "thumb print" hard before tooling joint. This may require as much as three hours in the shade and one hour in the sun in the summertime.
 2. The required personnel shall be kept on the job after hours, if necessary, to properly tool joints.
 3. Point and tool mortar joints, dense and neat, to produce a uniform, tight joint.
- B. Scored joints to be pointed to match masonry joints.
- C. Joints in Existing Masonry, that is to remain, and exposed are to be repointed where the joints are visibly damaged, incomplete, missing.

3.10 Installation, External Water Repellent

- A. All new Masonry surfaces are to be cleaned of any construction soiling and/or staining per the written instructions of the Manufacturer of the Concrete Masonry Units. Contractor shall use the cleaning product recommended by the Manufacturer and strictly follow the Manufacturer's recommendations and written instructions.
- B. All existing Masonry surfaces that are intended to remain, and intended to remain exposed, shall be completely and thoroughly cleaned per the written instructions of the Manufacturer of the Concrete Masonry Units. Contractor shall use the cleaning product recommended by the Manufacturer and strictly follow the Manufacturer's recommendations and written instructions.
- C. All new Masonry surfaces that are cleaned shall be completely and thoroughly dry prior to application of external water repellent.
- D. Apply water repellent, recommended by Concrete Masonry Unit Manufacturer to the exterior face of the new, and existing, masonry that is to remain exposed. Apply water repellent in strict accordance with Manufacturer's written instructions.
- E. Should the Manufacturer recommend that water repellent not be applied to the Concrete Masonry Units; the Contractor shall obtain such a recommendation, in writing, and submit it to the Architect and the District.

3.11 Field Testing and Quality Control

- A. District shall engage and pay for requisite Inspections, Special Inspections, and Laboratory Testing.
- B. Qualified Inspecting and Testing Agencies shall be acceptable to Consulting Engineers.
- C. Required Inspections, Testing and Special Inspections shall be as specified or enumerated in Special Inspection Matrices on drawings.

3.12 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Structural Steel and Miscellaneous Metals as shown on the drawings and as specified herein.
- B. Provide anchor bolts along with installation templates. Provide and install nuts and washers with, respective, anchor bolts.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

- A. Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.
- B. American Institute of Steel Construction (AISC):
 - 1. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges
 - 2. AISC 316 - Manual of Steel Construction
 - 3. AISC 348 - Specification for Structural Joints
 - 4. AISC 360- Specification for Structural Steel Buildings
- C. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM A36 - Standard Specification for Carbon Structural Steel
 - 2. ASTM A123 - Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings
 - 3. ASTM A325 - Standard Specification for High-Strength Bolts for Structural Steel Joists
 - 4. ASTM A500 - Standard Specification for Structural Tubing
 - 5. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 6. ASTM A924 - Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process
 - 7. ASTM A992 - Standard Specification for Structural Steel Shapes
 - 8. ASTM F1554 - Standard Specification for Anchor Bolts
- D. American Welding Society (AWS)
 - 1. AWS A2.4 - Standard Symbols for Welding, Brazing and Non-destructive Examination
 - 2. AWS D1.1 - Structural Welding Code - Steel
- E. Steel Deck Institute (SDI)
 - 1. SDI C – 2017 - Design Standard for Composite Steel Floor Deck Slabs

1.04 Submittals

- A. Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures
- B. Steel Fabricator shall submit documentation of their Certification sufficiently in advance of scheduled fabrication to allow time for review.

1.05 Quality Measures

- A. All structural steel shall be fabricated by a fabricator with one of the following minimum qualifications and be approved by Authority Having Jurisdiction, if applicable. Qualifications shall be in effect at time of bid.
 - 1. International Accreditation Service, Inc. (IAS) approved fabricator
 - 2. American Institute of Steel Construction (AISC) Certified Fabricator
- B. All structural steel shall be installed by an installer with one of the following minimum qualifications and be approved by Authority Having Jurisdiction, if applicable. Qualifications shall be in effect at time of bid.
 - 1. International Accreditation Service, Inc. (IAS) approved fabricator
 - 2. American Institute of Steel Construction (AISC) Certified Erector
- C. Manufacturer shall guarantee, for a period of one year, from the date of acceptance of the finished Building for occupancy, against failures and/or defects attributable to materials or fabrication workmanship.
- D. Contractor shall guarantee the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- E. Testing and Inspection:
 - 1. Engage a qualified testing agency to perform shop tests and inspections.
 - 2. Engage a qualified special inspector to perform special inspections noted in the Inspection Matricies,
 - 3. Prepare and submit test and inspection reports for all designated elements.

1.06 Delivery, Storage, and Handling

- A. Supply anchorage items to be embedded in, or attached to, other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation. Ensure that required reviews and/or approvals are obtained in a timely fashion.
- B. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation and minimize quantities of stored materials.
- C. Store materials to permit easy access for inspection and identification. Keep steel on wood pallets and off ground. Protect steel members and packaged materials from damage and deterioration.
- D. Store and protect fasteners from exposure to the elements.
- E. Do not store materials on structure in a manner that might cause distortion or damage to structural members or supporting structures. Repair or replace damaged materials or structures.
- F. Materials which are damaged or defective shall be removed, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year, from the date of acceptance of the finished Building for occupancy.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.

C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Materials

- A. Structural Steel shall conform to the following designated ASTM Standards:
1. Wide Flanges: ASTM A992
 2. Hollow Structural Sections (HSS): ASTM A500, grade B
 3. Channels and Angles: ASTM A36
 4. Plates: ASTM A36
 5. Continuity Plates and Cap Plates (*at moment connections*): ASTM A572, grade 50
 6. Anchor Rods: ASTM F1554, grade 36
 7. Steel Deck: 1 5/16" deep x 20 gage galvanized form deck
 8. High-Strength Bolts, Nuts and Washers: ASTM A325
 9. Headed Anchor Rods: ASTM F1554, Grade 36
 10. Threaded Anchor Rods: ASTM A36
- B. Structural Steel shall be detailed, fabricated and erected in accordance with AISC 360 and AISC 303 using Load and Resistance Factor Design (LRFD).
- C. Bolted connections shall be designed and installed using High-Strength Bolts, ASTM A325 or A490 Bolts. ASTM A325 Bolts, shall be used in bearing-type connections with threads permitted in the shear plane (Type N), unless otherwise noted. Washers shall conform to ASTM F436.
- D. Shear connectors shall be Nelson type S3I, or equivalent, manufactured from Cold Drawn Steel conforming to ASTM A108. Studs shall conform to AWS C5.4 and AWS D1.1.

2.03 Fabrication

- A. Shop fabricate and assemble structural assemblies, to greatest extent possible, in accordance with AISC 303 and AISC 360.
1. Properly mark and match mark materials for any required field assembly.
 2. Fabricate for delivery sequence that will expedite erection and minimize field handling of materials.
 3. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Finish surfaces of members to be exposed in final structure, shall be free of markings, burrs, and other defects.

2.04 Finish

- A. Surface Preparation:
Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards, per paint and coating Manufacturer's written instructions, directions, and/or recommendations:
1. SSPC-SP 2 - Hand Tool Cleaning
 2. SSPC-SP 3 - Power Tool Cleaning
 3. SSPC-SP 7 – Brush-off Blast Cleaning
 4. SSPC-SP 10 – Near White Blast Cleaning
- B. Shop Primed:
Immediately after surface preparation is complete, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide the minimum, recommended, dry film thickness. Priming shall result in full coverage of joints, corners, edges, and exposed surfaces.

All structural steel surfaces shall be shop primed, except for the following:

1. Surfaces to be galvanized
2. Surfaces embedded in concrete or mortar
3. Surfaces to be field welded
4. Surfaces of high-strength bolted, slip-critical connections

- C. Galvannealed:
Structural steel which will be exposed, or powder coated, shall be galvannealed, (zinc-iron alloy-coated galvannealed steel, ASTM A 653, Class A60) unless noted or shown otherwise. Touch-up where damaged, prior to powder coating or during installation.
- D. Powder Coated:
Structural support elements which will be exposed to view, or noted, shall be finished with a shop applied, oven baked, high performance powder coat in strict accordance with AAMA2605. Custom Color as selected by the Architect.
- E. Protect all primed and finished elements from damage during transport and installation. Contractor shall repair damaged surfaces or replace the element if the damage is deemed sever.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to erection, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Temporary Shoring and Bracing:
Provide temporary shoring and bracing of members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made.
- C. Setting Bases and Bearing Plates:
Clean concrete and masonry bearing surfaces of bond reducing materials and roughen to improve bond to surfaces, if necessary. Clean bottom surface of base and bearing plates. Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.
 - 1. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
 - 2. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.
- D. Field Assembly:
Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces that will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- E. Level and plumb individual members of structure within specified AISC tolerances.
- F. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

- G. Splice members only where indicated, or noted, on reviewed shop drawings.
- H. Erection Bolts:
On exposed welded construction, remove erection bolts, fill holes with plug welds, and grind smooth at exposed surfaces.
 - 1. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 - 2. Do not enlarge unfair holes in members by burning or by using drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.
- I. Touch Up Painting:
Immediately after erection, clean damaged areas, field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
 - 1. Apply by means necessary to achieve the same quality of appearance as the immediate adjacent surface, and to provide minimum dry film thickness of 1.5 mils.

3.03 Field Quality Assurance:

- A. Make necessary corrections that inspections and laboratory test reports indicate are not in compliance with contract documents or code requirements. Upon completion of required rework; have Inspectors and/or Testing Labs, at Contractor's expense, confirm compliance of corrected work.
- B. Obtain and submit test and inspection reports for all corrected work.

3.04 Protection and Cleaning:

- A. Clean installed materials and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, TOOLS materials and incidentals required, and install Cold Formed Metal Framing as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data Sheets
- B. Shop Drawings including member sizes, types, fasteners, anchorage details, reinforcing, opening details, strapping, bracing, bridging, splices, accessories, connection details, and attachments to adjoining materials.

1.04 Standards

- A. Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.
- B. American Iron and Steel Institute (AISI):
 - 1. AISI S100-16 - Specification for the Design of Cold-Formed Steel Structural Members
 - 2. AISI S240-15 - Standard for Cold Formed Steel Structural Framing
 - 3. AISI S400-15 w/S1-16 – Standard for Seismic Design of Cold Formed Steel Structural Systems
- C. American Society for Testing and Materials (ASTM) International
 - 1. ASTM A36 - Standard Specification for Carbon Structural Steel
 - 2. ASTM A1003 - Specification for Steel Sheet for Cold Formed Framing Members
- D. American Welding Society (AWS):
 - 1. AWS D1.3 – Structural Welding Code – Sheet Steel

1.05 Delivery, Storage, and Handling

- A. Deliver, handle and protect Cold Formed Metal Framing members from exposure to the elements and physical damage from ongoing construction.
- B. Store materials in their original bundles in a clean, protected location, off the ground.
- C. Materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.06 Quality Measures

- A. Manufacturer shall guarantee, for a period of one year, from the date of acceptance of the finished Building for occupancy, against failures and/or defects attributable to materials or fabrication workmanship.
- B. Contractor shall guarantee the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Clark Dietrich Building Systems
 - 2. CEMCO
 - 3. SCAFCO

2.03 Framing Members

- A. Furring Channels - ASTM C645, 25- gauge, $\frac{7}{8}$ inch hat channels, 1- $\frac{1}{2}$ inch 'Z' channels, furred walls, columns, and ceilings.
- B. Studs - ASTM C645, 20-gauge, 'C'- 3 $\frac{5}{8}$ inch deep or as otherwise shown or noted. Provide stud manufacturer's standard clips, shoes, ties, reinforcements, fasteners and other accessories as required for a complete framing system.
- C. Runners - Match studs; Type as recommended by manufacturer for floor and head support of framing, and for vertical abutment of finishes. Provide slip type detail at connections to structural heads.

2.04 Materials

- A. All Cold Formed Metal Framing shall be designed, fabricated and erected in accordance with manufacturer's recommendations and in accordance with the latest edition of AISI S100-16.
- B. Steel for 14 and 16-gauge studs and joists and for all diagonal tension straps shall have a minimum yield strength of 50ksi steel for all 18 and 20 Gauge studs and joists and for all gauges of track, accessories, and bridging shall have a minimum yield strength of 33ksi.
- C. All Cold Formed Metal Framing shall be G60 galvanized, typical. Cold Formed Metal Framing supporting anchored veneer at exterior walls shall be G60 galvanized. All connection screws shall be zinc coated.

- D. All cold-formed metal framing and powder-driven fasteners shall be ICC-approved. All welding shall be performed in accordance with AWS D1.3 " Structural Welding Code – Sheet Steel" by welders experienced in light gauge structural steel framing work.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Examine, existing conditions, adjacent surfaces, and materials.
 - 1. Establish that the surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Cold Formed Metal Framing in accordance with manufacturer's written instructions and per AISI S240-15. Cold Formed Metal Framing may be shop or field fabricated for installation.
- C. Install Cold Formed Metal Framing and accessories plumb, square, and true to line, and with connections securely fastened.
- D. Install Cold Formed Metal Framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- E. Install temporary bracing and supports to secure framing and support loads equal to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- F. Do not bridge building expansion joints with Cold Formed Metal Framing. Independently frame both sides of joints.

3.03 Installation, Framing Members

- A. Align runner tracks to the partition layout at both floors and ceilings. Secure tracks to floor and ceiling construction not over 16-in on center. Provide fasteners at all corners and ends of runner tracks.
- B. Track shall be fastened to structural steel with a minimum of $\frac{1}{8}$ inch weld each side, 2" long spaced at 32" OC or two (2) 0.157" diameter powder actuated fasteners (*Hilti X-U ESR 2269 or equivalent*) at 16" oc.
- C. Provide #10-16 self-drilling screws for all cold-formed steel to cold-formed steel connections.

- D. Track shall be fastened to concrete with a minimum of two (2) 0.157" diameter powder actuated fasteners (*Hilti X-U ESR 2269 or equivalent*) through track at each stud. Provide 1 ½" minimum embedment, 4" minimum spacing, and 3" minimum concrete edge distance.
- E. Maintain ¾ inch minimum distance between centers of connection screws and ¾ inch minimum distance from the center of screw to edge of connected part. Install fasteners from thinner through thicker material.
- F. Provide mechanical bridging at intervals not exceeding 4'- 0" on center at all cold-formed steel walls. Bridging shall be in place prior to placing any loads on the wall.
- G. Use full length studs between runner tracks wherever possible. If necessary, splice studs by nesting with a minimum lap of 8-inch and fasten laps with two screws through each flange. Friction fit studs to runner tracks by positioning and rotating into place. Provide positive attachment to runner tracks for studs located at partition corners and intersections and adjacent to openings, using ⅜-inch self-drilling screws or stud clinching tool on both flanges or studs. Space studs as and where shown.
- H. All studs shall be securely seated for full end bearing on top and bottom track. Unless noted otherwise, provide double studs at all jambs, corners, intersections, beam bearings, and joist bearings. Do not notch flanges of joists or studs.
- I. Studs shall be fastened to track with a minimum of two (2) #10-16 self -drilling screws with stud securely into track.
- J. Field modifications of Cold Formed Metal Framing systems shall not be allowed without prior written approval of the Engineer of Record.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Metal Fabrications as shown on the drawings and as specified herein, including but not limited to:
 - 1. Aluminum Access Ladder
 - 2. Aluminum Shade Grilles
 - 3. Aluminum Standoffs

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

- A. Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.
- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 2605 - Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
- C. American National Standards Institute (ANSI) - ANSI A14.3 National Standard for Ladders - Fixed - Safety Requirements
- D. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM B209 - Standard Specification for Aluminum Sheet and Plate
 - 2. ASTM B210 - Standard Specification for aluminum drawn seamless tube
 - 3. ASTM B221 - Standard Specification for Aluminum Extruded Bars and Tubes
 - 4. ASTM B429 - Standard Specification for Aluminum Structural Pipe and Tube
 - 5. ASTM E894 - Standard Test Methods for Anchorage of Permanent Metal Railing Systems and Rails for Buildings
 - 6. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings
 - 7. ASTM E985 - Specifications for Permanent Metal Railing Systems and Rails for Buildings
 - 8. ASTM D1187 - Specification for Asphalt-Base Emulsions for Protective Coatings for Metal
- E. American Welding Society (AWS)
 - 1. AWS D1.2 - Structural Welding Code- Aluminum
- F. U.S. Occupational Safety and Health Administration (OSHA) - OSHA/ANSI A14.3 Standards for Fixed Wall Ladders.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data Sheets

- B. Shop Drawings showing:
 - 1. Layout/ Configuration
 - 2. Critical dimensions
 - 3. Anchorage and/or structural support
 - 4. Method of separation from dissimilar metals
- C. Calculations or test data demonstrating that:
 - 1. Shade Grilles will resist wind loads required by the California Building Code
 - a. In the configuration shown on the Drawings
 - b. Calculations shall be stamped by a professional engineer registered in California.
- D. Samples:
 - 1. Two (2) 12" x 12" samples of the "Egg Crate" shade grille
 - 2. Two (2) samples of the standoff supports.

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that their Metal Fabrication will be free of defects in materials and factory workmanship, and that defective material(s) or product(s) will be repaired or replaced immediately, after proper notification.
- B. Installing contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Contractor shall coordinate dimensions of adjacent construction prior to development of fabrication drawings and shall confirm dimensional accuracy, through field measurement, prior to installation, to ensure proper fit and allow for construction tolerances.
- D. Shop assembled mechanical joints shall have a dimensional tolerance of $\frac{1}{16}$ ". Expansion joints shall have a tolerance of $\frac{1}{8}$ " to allow for thermal expansion.
- E. Qualify welders and procedures per AWS standard qualification procedures.

1.06 Delivery, Storage, and Handling

- A. Ensure that required reviews and/or approvals are obtained in a timely fashion, so as not to delay delivery to the Work Site.
- B. Deliver items to be incorporated into the work of other trades, including anchorage items to be embedded in, or attached to, other construction. Schedule delivery to allow sufficient time for review of items prior to installation.
- C. Provide setting diagrams, templates, instructions, and directions required for installation, with the delivery of specified items to the Work Site.
- D. Deliver specified materials and products to Project Site in original containers with seals unbroken. Items and containers shall be labeled with manufacturer's name, product brand name, local contact, and if applicable type and model number.
- E. Store and protect materials and products from exposure to the elements and potential damage from construction activities.
- F. Materials or products which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace materials or products, specified in this Section, that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Access Ladder:
Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Alaco Ladder Company
 - 2. O'Keefe's Inc.
 - 3. Royalite Manufacturing, Inc.
- B. Shade (*Egg Crate*) Grille:
Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Architectural Grilles and Sunshades, Inc. (AGS, Inc.) (BJ 3"P)
 - 2. DAMS Inc. (EG Series)
 - 3. Grating Pacific, Inc. (Coda Architectural -Aria 333 C-I)
- C. Standoffs:
Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. C.R. Lawrence Co., Inc.
 - 2. Gyford Standoff Systems
 - 3. MBS-Standoffs

2.03 Materials

- A. Access Ladder
 - 1. Ensure compliance with California Building Code and Work Safety Code (OSHA) requirements.
 - 2. 90° Fixed Ladder attached to masonry wall, centered on roof access hatch. Coordinate with Roof Access Hatch to determine maximum height
 - 3. Minimum width - 18", unless more required by code
 - 4. Minimum separation from wall – 6", unless more required by code
 - 5. Maximum rung spacing – 16", Non-slip rungs, preference for round rungs

6. Aluminum - mill finish
 7. Structural support, by Manufacturer:
 - a. Structural Design calculations and drawings sealed and signed by California Registered Structural Engineer
 - b. Provide positive separation from dissimilar metals to preclude galvanic action
- B. Shade (*Egg Crate*) Grille
1. Horizontal and vertical shade grilles, to match in configuration and finish
 2. 1/8" flat bar in 3"x3"x3" (*Egg Crate*) configuration, as shown on drawings
 3. Smooth internal intersections
 4. Clear, satin, anodized finish
 5. Structural support, by Manufacturer:
 - a. Structural Design calculations and drawings sealed and signed by California Registered Structural Engineer
 - b. Horizontal, angle, support off horizontal HSS structure, as shown on drawings
 - c. Vertical support, on nelson studs, off vertical HSS structure, as shown on drawings
 - i. Coordinate with supplier of Cast Resin Panels for required support and locations
 - ii. Allow for aluminum standoffs, as shown on drawings
 - III. Locate and shop install nelson studs on HSS vertical support columns
 - d. Both horizontal and vertical shade grilles shall have full 3"x3" grid at entire perimeter
 - e. Provide positive separation from dissimilar metals to preclude galvanic action
- C. Standoffs – at vertical shade structure
1. Square aluminum standoffs to provide separation between materials, as shown on drawings
 2. Standoffs provide tolerance to allow full 3"x3" grid at perimeter of shade grilles
 3. Square standoffs
 - a. Minimum of 1" square, maximum 1 1/4" square
 - b. Minimum of 3/4" horizontal separation, between materials
 4. Clear, satin, anodized finish

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Examine, existing conditions, adjacent surfaces, and materials.
 1. Establish that the adjacent surfaces, support structures, and finishes are complete and ready to receive the installation.
 2. Verify that locations and dimensions are as indicated on the drawings, and coordinated with Shop Drawings, where applicable.
 3. Verify that adjacent surfaces and support structures are secure, clean and free from any damage that would preclude installation.
- B. Installation of the vertical Aluminum Shade Grille, necessitates coordination of placement and installation of support studs off structural steel support columns, and support and installation requirements of the polycarbonate accent panels, to provide an even, level and secure structure.
- C. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- D. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Install items specified in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Install strictly in accordance with shop drawings utilizing established working points.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Rough Carpentry as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

- A. Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.
- B. APA- The Engineered Wood Association (APA):
 - 1. APA - Guide to Plywood Grades
- C. American Wood Preservers Association (AWPA):
 - 1. AWPA C2 - Lumber, Timbers, Bridge Ties and Mine Ties, Pressure Treated.
 - 2. AWPA C9 - Plywood, Pressure Treated.
 - 3. AWPA U1 - Use Category System: User Specification for Treated Wood.
- D. West Coast Lumber Inspection Bureau (WCLIB):
 - 1. WCLIB Standard No. 17 - Grading Rules for West Coast Lumber
- E. Western Wood Products Association (WWPA):
 - 1. WWPA - Western Lumber Grading Rules

1.04 Quality Measures

- A. Lumber shall comply with the WWPA - Western Lumber Grading Rules, or the WCLIB Standard No. 17 - Grading Rules for West Coast Lumber. Lumber shall be stamped with a grade mark indicating grade, species, moisture content at time of surfacing, and mill.
- B. For exposed lumber, grade stamp shall be on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by inspection agency.
- C. Obtain Pressure Treated Wood products from a single source, both for treatment and treatment formulation.
- D. Pressure treatment shall not adversely affect application, permanence, or appearance of finish paint systems.
- E. Contractor shall guarantee installation, for one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- F. Contractor shall submit a certificate certifying that specified material has been pressure treated.

1.05 Delivery, Storage, and Handling

- A. Deliver lumber to Project Site stacked in bundles, or on pallets, labeled with supplier's name, product brand name and type.
- B. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from exposure to the elements by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.

PART 2 PRODUCTS

2.01 General

- A. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- B. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Materials, Lumber

- A. Provide miscellaneous lumber for support or attachment of other construction, as shown on the Drawings, including:
 - 1. Blocking
 - 2. Nailers
 - 3. Top Plates
 - 4. Rooftop equipment bases and support curbs
- B. Plywood shall be APA rated sheathing, with an Exterior or Exposure 1 Classification.
- C. Plywood properties and attachment:
 - 1. Thickness - 19/32"
 - 2. Spandex ratio - 40/20
 - 3. Edge fastening - #10 screws @ 6" OC
 - 4. Intermediate fastening - #10 screws @ 12" OCC
- D. Lumber properties:
(Joists, beams, ledgers and top plates - thickness less than or equal to 4")
 - 1. Fb (psi): 900
 - 2. Fv (psi): 180
 - 3. E (psi): 1,600,000
 - 4. Fc (psi): 1350
 - 5. Species and grade: Douglas Fir-Larch #2
- E. Beams 5"x5" and larger
 - 1. Fb (psi): 1300
 - 2. Fv (psi): 170
 - 3. E (psi): 1,600,000
 - 4. Fc (psi): 925
 - 5. Species and grade: Douglas Fir-Larch #1

2.03 Materials, Fasteners

- A. Joist hangers and other miscellaneous framing anchors shall be as manufactured by Simpson Strong-Tie Company, Inc. or other manufacturer approval of Agency Having Jurisdiction. All nail holes in joist hangers and miscellaneous framing anchors shall be filled with nails per manufacturer's published recommendations.
- B. Nails:
1. Nailing of wood members shall conform to the 2022 California Building Code and/or as indicated. Box nails are not permitted.
 2. Nails shall penetrate $\frac{1}{2}$ length of nail into piece receiving point.
 3. To connect pieces 2 inches net in thickness, 16d nails may be used.
 4. Do not drive nails closer together than half their length, nor closer to edge of piece of lumber or timber than $\frac{1}{4}$ their length.
 5. Spacing and size of nails to be such that splitting will not occur. Pre-bore holes for nails wherever necessary to prevent splitting. Bore diameter of holes smaller than diameter of nail or spike ($\frac{3}{4}$ dia.).
 6. For plywood nailing, barbed plywood nails, size and spacing as indicated. Nails shall have edge distances of not less than $\frac{3}{8}$ inch (9.5 mm).
 7. Use galvanized nails where exposed to weather or where members are built-in to roofing.
- C. Screws: Bright steel wood screws
1. Screws shall be turned, not driven into place.
 2. Self-tapping screws shall be used for fastening to metal framing.
 3. Countersink where heads will interfere or as required.
 4. Drill screw holes the same diameter and depth as shank; bore holes for threaded portion of screws with bit no larger than base of thread.
 5. Use galvanized or cadmium plated screws on fastenings exposed to the elements or where members are built into roofing.
- D. Lag screws:
1. Screws shall be turned, not driven into place.
 2. Penetration into lumber shall not be less than $\frac{2}{3}$ of the length of the lag screw.
 3. To install lag screws, bore hole the same diameter and depth as the shank, after which the hole shall be continued to a depth equal to the length of the lag screw with a diameter no larger than $\frac{3}{4}$ of the shank diameter.
 4. Provide lag screws bearing on wood with malleable iron or steel plate washers under heads.
 5. Use galvanized lag screws and washers where exposed to the elements or where members are built into roofing.
- E. Bolts: Standard mild steel, square or hex head machine bolts with square nuts and malleable iron or steel plate washers, conforming to ASTM A307
1. Install in drilled holes the diameter of the bolt, $\frac{1}{32}$ inch (0.8 mm) to $\frac{1}{16}$ inch (1.6 mm) over size.
 2. Bolting of wood members shall conform to California Building Code requirements and as called for on the drawings.
- F. Washers: Provide bolts bearing on wood, unless noted otherwise on the drawings, with malleable iron, or steel plate washers under heads and nuts.
1. Do no final bolting until structure has been properly aligned.
 2. Use galvanized bolts, nuts and washers where exposed to the elements or where members are built-in to roofing.

2.04 Pressure Treatment

- A. Where shown on the drawings, or specified, wood members exposed to the elements or in contact with masonry or concrete shall receive, preservative, pressure treatment.
- B. Lumber shall have a minimum moisture content of 19 percent after pressure treatment.

- C. Preservative shall penetrate deep into wood.
- D. Fasteners and connectors used with preservative pressure treated lumber shall be G185 hot dip galvanized, Type 304 stainless steel or Type 316 stainless steel.
- E. Where wood is cut, on site, apply two (2) heavy coats of the same preservative treatment, in accordance with manufacturer's written instructions.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Examine, existing conditions, adjacent surfaces, and materials.
 - 1. Establish that the surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
- B. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- C. Coordinate details with other work supporting, adjoining, or fastening to rough carpentry work.

3.03 Installation, Procedures

- A. Placement:
 - 1. Work must be accurately cut and solidly fit together to provide strong rigid joints with full bearing for all members.
 - 2. Split, warped, or otherwise defective material or poor workmanship will not be accepted.
 - 3. Wood work shall be level, properly aligned, plumb, and true, with close fitted joints.
 - 4. Securely attach wood to substrate by anchoring and fastening as shown or in accordance with accepted industry standards, in compliance with applicable codes.
- B. Nailed Connections and Fastenings:
 - 1. Install joist hangers and framing connectors in accordance with manufacturer's written instructions, as framing proceeds.
 - 2. Nail joints in accordance with the California Building Code stipulations.
 - 3. Use only common nails, unless otherwise noted.
 - 4. Where required, predrill to prevent splitting.
 - 5. Replace structurally or architecturally objectionably split members.

3.04 Installation, Specifics

- A. Provide blocking, grounds, nailers, stripping, and backing as noted and as required to secure work.
- B. Install telephone and electrical panel backboards with plywood sheathing material where required. Size the back board by 12 inches beyond size of telephone and electrical panel.
- C. Install exposed trim with minimum number of joints practical.
 - 1. Use full-length pieces from maximum lengths of lumber available.
 - 2. Do not use pieces less than 24 inches long except where necessary.
 - 3. Use scarf joints for end-to-end joints.
 - 4. Stagger end joints in adjacent and related members.
- D. Do not notch or drill joists, beams or load bearing ledgers without prior approval of Structural Engineer.
- E. Layout roof deck with plywood face grain perpendicular to supports.
 - 1. Stagger joints.
 - 2. Provide ply clips at midspan of all unsupported plywood edges.
 - 3. All nailing shall be common nails. If gun nails are used in lieu of common nails, reduce nail spacing to 4" at edge nailing and 8" at intermediate nailing.
 - 4. First sheet, of plywood sheathing, adjacent and parallel to walls, perimeter members or members identified as chord, collector or drag members shall be full width sheets. Elsewhere minimum sheet width 2'-0".

3.05 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials, prior to covering. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials and incidentals required, and install Insulation as shown on the drawings and as specified herein, including Insulating Sheathing, Tapered Panel (Roof) Insulation, Stud Cavity Fiberglass Batt Insulation, and Black Board Acoustic Insulation.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials
 - 2. ASTM C578 Standard Specification for Rigid Cellular Polystyrene Thermal Insulation
 - 3. ASTM C552-17 Standard Specification for Cellular Glass Thermal Insulation
 - 4. ASTM C578-17a Standard Specification for Rigid Cellular Polystyrene Thermal Insulation
 - 5. ASTM C665 Specification for Mineral-Fiber Blanket Thermal Insulation
 - 6. ASTM C1320 Standard Practice for Installation of Mineral Fiber Batt Thermal Insulation

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data for each Insulation type.

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Insulation materials will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original packaging with seals unbroken. Containers shall be labeled with manufacturers name, product brand name, type and local contact information.
- B. Handle and protect packages from physical damage during transport. Store materials in their original undamaged containers in a clean, dry, and protected location. Insulation shall be protected from exposure to the elements and extraneous construction activity.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Insulation that fails due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of maintenance, manufacturer's service and future procurement.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal, as stipulated in the General Conditions of the Contract:
 - 1. JM Johns Manville
 - 2. Owens Corning Insulating Systems

2.03 Materials

- A. Insulating Sheathing: Unfaced Extruded Polystyrene Rigid Board Insulation in compliance with the following:
 - 1. ¾-inch, Type IV sheathing, confirm framing spacing
 - 2. Thermal Resistance, minimum R-5 per inch
 - 3. Square edge
 - 4. Recycled Content, minimum of 20%
 - 5. Manufacturer's recommended accessories for installation
- B. Tapered Panel (Roof) Insulation: Extruded Polystyrene Insulation
 - 1. 48 -inches by 96 -inches, Tapered, Type IV
 - 2. Base layer, 1 -inch thick.
 - 3. Overall thickness to achieve code required, roof slope, minimum ¼ -inch per foot
 - 3. Thermal Resistance, minimum R-5 per inch
 - 4. Square edge
 - 5. Recycled Content, minimum of 20%
 - 6. Manufacturer's recommended accessories for installation
- C. Stud Cavity Batt: Unfaced Fiberglass Batt Insulation in compliance with the following:
 - 1. Full width, Type I Batt, confirm framing spacing
 - 2. Thermal Resistance, minimum R-13
 - 3. Formaldehyde free
 - 4. Recycled Content, minimum of 50%
 - 5. Manufacturer's recommended accessories for installation
- D. Acoustic Insulation: Black Board, Rigid Fiberglass Insulation
 - 1. 1-inch thick, 48" wide board
 - 2. Recycled Content, minimum of 53%
 - 3. Manufacturer's recommended adhesive for installation

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Insulation in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Installation, Stud Cavity Batt

- A. Install unfaced Fiberglass Batt Insulation as indicated on Drawings, in accordance with Manufacturers written instructions.
- B. Install Batt Insulation tight to framing. Do not compress insulation. Fill all spaces and voids and fluff if necessary to full thickness to achieve stipulated R-value.
- C. Friction fit insulation. Supplement with straps, wire, or tabs per Manufacturers written instructions.
- D. Install finish material, as shown on drawings, after framing and utilities have been reviewed and approved by the Agency Having Jurisdiction. Cover as expeditiously as possible to minimize potential damage through exposure to ongoing construction activities.

3.04 Installation, Insulating Sheathing

- A. Install Extruded Polystyrene (XPS) Insulation as indicated on Drawings, in accordance with Manufacturers written instructions.
- B. B Install XPS Insulation in maximum sizes to minimize joints. Locate joints square to framing. Center end joints at framing, square and tight.
- C. Fasten insulation using adhesive, or mechanical fasteners, recommended by Manufacturer

3.05 Installation, Tapered Panel (Roof) Insulation

- A. Installation of Tapered Panel Insulation shall be the responsibility of, and scheduled by, the Roofing Contractor.
- B. In addition to 3.01, prior to installation, the Roofing Contractor shall:
 - 1. Verify that adjacent materials are dry and ready to receive the Tapered Insulation.
 - 2. Verify that the roof deck drains are completely free of water, if within 48 hours of rainfall.
 - 3. Verify that the dead load carrying capability of the roof structure is sufficient to support code mandated live loads and dead loads incident on the roof, including the entire roof covering/insulation system.
 - 4. Verify that the roof structure provides adequate support for the insulation and work activities associated with the installation.

- C. Install Tapered Insulation, as indicated on Drawings, using adhesive or mechanical fasteners in compliance with Manufacturer's written instructions.
- D. Install Tapered Insulation in parallel rows with end joints staggered. Install side and end joints closely but do not force together.
- E. In multiple layer applications, install with side and end joints staggered in relation to layer below.
- F. See Section 07 54 23 Thermoplastic Polyolefin, Roofing for balance of installation.

3.06 Installation, Black Board Acoustic Insulation

- A. Installation of Black Board Acoustic Insulation shall be the responsibility of, and scheduled by, the Contractor installing the Base Wall, Wood 'Screen,' in the Board Room, as shown on the Drawings.
- B. Acoustic Insulation to be cut to fit snugly between the furring strips that will support the finish wood 'Screen.' Secure board insulation to concrete base wall with adhesive recommended by the Insulation manufacturer.
- C. Insulation shall be installed per the manufacturer's written instructions. Insulation shall be installed in the same orientation to provide a smooth, uniform and consistent surface appearance.

3.07 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Metal Wall Panels, in a horizontal configuration with reveals to match horizontal mortar joints, approximately 8" o.c., in masonry walls, as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Architectural Manufacturers Association (AAMA) Panel profile
 - 1. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM, E1105- Standard Test Method for Field Determination of Water Penetration
 - 2. ASTM, B209 – Aluminum
 - 3. ASTM, A755 – Coil Coating

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings: Submit detailed drawings that show:
 - 1. Panel profile
 - 2. Panel layout, configuration and panel dimensions
 - 3. Coordination drawings, including elevations, sections, and details exhibiting structural support to confirm compliance with design intent and relationship to adjacent building elements.
- C. Samples:
 - 1. Three (3) – 3-inch by 5-inch color draw downs, of selected custom color
 - 2. Once color is approved; submit a full size samples painted with approved color
 - a. Sample to consist of two (2) full size, 12 -inch long panels with integral reveal between the panels, to show the how the panels overlap vertically to be weathertight.
 - b. Include interlocking (horizontal) gasket and fasteners
- D. Certification Data
- E. Warranty

1.05 Quality Measures

- A. Manufacturer shall have, a minimum of, five (5) years experience in the production of Insulated Metal Panels. Manufacturer shall demonstrate experience with examples of similar, finished, projects, including location, project type, size, and Client, if requested.

- B. Manufacturer shall Guarantee for a period of two years, from the date of acceptance of the finished Building for occupancy, that the Metal Panels will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- C. Contractor shall be Certified, by the Manufacturer, as an experienced installer. Contractor shall have successfully installed this material on a minimum of two (2) projects of equal or larger scale.
- D. Alternatively, the Manufacturer shall provide training to the Installing Contractor and:
 - 1. Provide proof of satisfactory completion of the training
 - 2. Provide an authorized Manufacturer's Representative, experienced with the installation of the Metal Panels, shall meet on Site prior to commencement of the installation, to validate suitability of substrate for installation. The Manufacturer's Representative shall visit the Site during the course of the installation to validate, and confirm, the quality of the installation, and again at the completion of the installation to validate the installation for Warranty, all at no additional cost to the Owner.
- E. Contractor shall guarantee, the installation, for a period of two years, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation. Contractor shall be responsible for any damage to adjacent materials and/or finishes resulting from failures associated with the installation

1.06 Delivery, Storage, and Handling

- A. Deliver Metal Panels and components to Project Site in Manufacturer's original packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, product type, and local contact information.
- B. Handle and protect Panels and components from physical damage, during transport. Store materials in their original undamaged containers in a clean, protected location, above the ground.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at no expense to the District.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of two years.
- B. Manufacturer shall replace Metal Wall Panels that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner. Manufacturer shall be responsible for repair, or replacement, of any damages to adjacent materials and/or finishes associated with failure of the Metal Wall Panels.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.
- D. Finish Warranty: Manufacturer shall repair or replace Insulated Metal Wall Panels that exhibit deterioration of finish, and /or color fading that is deemed excessive by the Industry, in similar installations, within ten (10) years from the date of acceptance of the finished Building for occupancy, at no cost to the District.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality performance criteria and aesthetic desired.

- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. Procure Insulated Metal Wall Panels and associated components from a single Manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- D. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. *Versa-Seam* by ATAS International, Inc.

2.03 Materials

- A. *Versa-Seam*, Non-embossed
 - 1. 1-inch-thick panels
 - 2. Horizontal orientation with $\frac{3}{8}$ -inch horizontal reveals, to align with masonry joints.
 - 3. Custom vertical height- $7\frac{5}{8}$ -inches face with $\frac{3}{8}$ -inch horizontal reveals
 - 4. Panel lengths to be uninterrupted with no visible vertical joints
 - 5. 70 percent Fluoropolymer (PVDF), Custom Color: Coppertone (23)
 - 6. .032 Aluminum
 - 7. Integral parapet coping to match Metal Wall Corner detail: Bent and folded, or mitered (trimless) corner.
 - 8. Accessories and Trim: As recommended by Manufacturer for complete finished installation.

PART 3 EXECUTION

3.01 Design/ Preparation

- A. Prior to preparation and submittal of Shop Drawings, review Construction Documents for consistency of Architectural intent with products specified.
- B. Review Architectural and Structural design details for adequacy of support, under seismic conditions, and compliance with California Building Code requirements.

3.02 Installation/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Confirm that the panels arrived, on Site, undamaged. Contractor shall immediately remove and replace any damaged panels
 - 2. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 3. Verify that locations, elevations, and dimensions are as indicated on the drawings.
 - 4. Verify that the structural support elements are as indicated on the Drawings and consistent with the Shop Drawings.
 - 5. Confirm that the structure, adjacent materials, products, and finishes are ready for installation of the Metal Wall Panels.
- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.03 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Installation shall be in accordance with Manufacturer's written installation instructions, guidelines and recommendations.

3.04 Installation, Specific

- A. Install panels plumb, level, and true-to-line to dimensions and layout indicated on shop drawings.
- B. Place panel fasteners through leading edge face metal, concealed within the joint of the panel. Secure units to the structural supports. Space fasteners as recommended by manufacturer or otherwise indicated on the approved shop drawings.
- C. Place trim and trim fasteners only as indicated in the Details on the reviewed Shop Drawings.
- D. Field drill weep holes, per Manufacturer's written recommendations, in discrete locations, where appropriate, in horizontal trim.
- E. Sealants:
 - 1. Use non-skinning butyl tube sealant only for tight metal-to-metal contact. Do not use non-skinning butyl tube sealant to bridge gaps.
 - 2. If applicable; Place a continuous strip of butyl tape or butyl tube sealant on closure trims for the length of the panel to be covered by trim.
 - 3. If applicable; Clean and prime surfaces to receive exterior exposed sealants in accordance with sealant manufacturer's recommendations.
 - 4. Follow sealant manufacturer's recommendations for joint width-to-depth ratio, application temperature range, size and type of backer rod, and compatibility of materials for adhesion.
 - 5. Direct contact between butyl and silicone sealants shall not be permitted.

3.05 Field Quality Control

- A. Field Water Test: After completing portion of metal wall panel assembly including accessories and trim, test a 2-bay area selected by the Architect for water penetration in accordance with AAMA 501.2 or ASTM E1105.
- B. This product has been incorporated into previous work on Site and, pending review and approval, shall be used as the standard for the work on this Phase of the Work.

3.06 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities.
- B. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection.
- C. Repair any damage found, at no cost to the owner.
- D. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Thermoplastic-Polyolefin (TPO) Roofing as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Tapered Insulation in Section 07 20 00 Insulation
- C. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society of Civil Engineers/Structural Engineering Institute
 - 1. ASCE/SEI 7-2005 - Minimum Design Loads for Buildings and Other Structures
- B. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM C578 - Standard Specification for Rigid Cellular Polystyrene Thermal Insulation
 - 2. ASTM C 591-17 - Standard Specification for Unfaced Rigid Polyisocyanurate Thermal Insulation
 - 3. ASTM D 1079-16 - Standard Terminology Relating to Roofing, Waterproofing
 - 4. ASTM C 1177 - Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - 5. ASTM D 6878 - Specification for Thermoplastic Polyolefin Based Sheet Roofing
- C. National Roofing Contractors Association (NRCA)
 - 1. NCRA Membrane Roofing Systems

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data for each roofing component
- B. Shop Drawings showing:
 - 1. Layout/ Configuration
 - 2. Critical dimensions
 - 3. Tapered Insulation and Cover Board
 - 4. Details including: Base Flashings, Membrane Terminations
- C. Qualification Data
- D. Installation Certification
- E. Warranty

1.05 Quality Measures

- A. Installer Certification:
Roofing System Manufacturer's shall provide signed documentation that the Installer is Certified or Authorized, by the Manufacturer, to install the specified Roofing System, and that the completed installation shall be eligible to receive the specified roofing Manufacturer's warranty.
- B. Manufacturer's Technical Representative:
Roofing Manufacturer shall provide a Technical Specialist to be on-site to review the conditions prior to installation, at the commencement of installation and to review the completed installation. The Manufacturer's Representative shall provide signed Certification that the Roofing Installation complies with the Manufacturers written criteria for a Fully Adhered TPO Membrane Roof.

1.06 Delivery, Storage, and Handling

- A. Deliver roofing materials to Project Site in original packaging and containers with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, type and local contact information.
- B. Handle and protect roofing materials from physical damage. Store materials in their original undamaged containers in a clean, protected location, in compliance with Manufacturer's written instructions.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense
- D. Prior to and during installation; handle and place materials and equipment in a manner to avoid damage to the roof, building envelope and/or permanent deflection of the roof deck.

1.07 Warranty

- A. Warranty covers all work specified in this section.
- B. Manufacturer shall replace the roofing system, portions of the roofing system or roofing components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for Twenty (20) years, from that date.
- D. Installer agrees to repair or replace roofing and building components damaged by failure of roofing system and roofing system components resulting from installation workmanship or failure to follow manufacturer's written instructions, at no cost to the building owner.
- E. Installer's warranty shall commence on date of written acceptance of completed installation and shall extend for five (5) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality, performance, and general configuration desired.
- B. Procure materials from a single manufacturer or as approved by roofing manufacturer to provide for standardization of performance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 1. Carlisle SynTec
 2. Firestone
 3. GAF

2.03 Materials

Materials and products necessary for a complete Thermoplastic Polyolefin Roofing system including:

- A. Base and Tapered Insulation: Section 07 20 00 - Insulation
- B. Cover Board: ASTM C 1177, ½ -inch glass mat, water-resistant, gypsum substrate
- C. Preformed insulation shapes: saddles, crickets, edge strips, etc. for positive drainage
- D. Membrane:
 1. Smooth type, Fully Adhered, polyester scrim reinforced Thermoplastic Polyolefin
 2. 60 mil, Single-ply Membrane
 3. White, exposed face, Solar Reflectance Index (SRI) equal to or greater than 75
 4. Class 'A' - Fire Exposure Classification
- E. Auxiliary membrane Roofing Materials:

Materials and product components necessary for a complete roofing system, compatible with the specified Membrane, as recommended by roofing Manufacturer, including:

 1. Edge Metal and Termination Bars
 2. Metal Flashing
 3. Fasteners
 4. Bonding Adhesive
 5. Sealants
 6. Preformed Membrane Flashing
- F. Walkpads: TPO - 125 mil, Textured

2.04 Performance Requirements

- A. General Performance: Installed Roof Membrane and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, or installation. Roof membrane and flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Wind Uplift Classification: Class 1A-90
- D. Hail Resistance: MH
- E. Energy Performance: California, Title 24 Energy Efficient Standards; DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.

1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Document and notify the Architect of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Pre-installation Conference

- A. Contractor shall conduct a conference, at Project Site, prior to commencing roofing installation.
1. Attendees shall include Owner, Architect, Contractor, Roofing Installer, Manufacturer's Technical Representative, Testing and Inspection Agency Representative, and representatives of Installers whose work interfaces with or is affected by the roofing installation.
 2. At a minimum, the Conference Agenda, shall include:
 - a. Contractors safety program and procedures
 - b. Governing regulations and requirements for installation and completed roof system
 - c. Construction schedule, including roofing installation timeframe
 - d. Verification of availability of materials, personnel, and equipment for installation
 - e. Structural loading limitations of roof deck during and after installation
 - f. Roof deck/substrate conditions and compliance with installation requirements
 - g. Manufacturer's written installation instructions and requirements
 - h. Installation of roofing components, procedures and responsibilities
 - i. Protection requirements for roofing system during and at completion of installation
 - j. Technical Observation and required Inspection and Testing
 3. Contractor shall document the meeting proceedings and route the Meeting Minutes, for review and input, to the attendees, within six (6) Business Days.

3.03 Installation, Preparation

- A. Coordinate and ensure required safety measures are in place prior to beginning work on elevated surfaces. Ensure that all workers are aware of required safety procedures, prior to commencing work.
- B. Commence roofing system installation only when weather conditions are within the manufacturer's recommended limitations, and written instructions.
- C. When loading materials onto the roof, prior to and during installation, distribute placement of materials and equipment in a manner to avoid damage to the roof, building envelope, and/or permanent deflection of the roof deck, due to overloading.
- D. Material Safety Data Sheets (MSDS) must be accessible on-site all times during the transportation, storage and application of materials.

3.04 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install roofing systems in accordance with manufacturer's written instructions and per accepted industry standards, so as not to void the Warranty.
- C. Position membrane sheets, such that all field splices are away from low spots and out of drain sumps. All field splices should be shingled towards drains.
- D. Schedule, stage, and install the roofing system, so that the substrate, can be protected, from the elements, at the end of each work day. Ensure that insulation is not exposed to weather or water.

- E. Wet insulation shall be removed, legally disposed of, and replaced with new material, at no cost to the Owner.
- F. Protect newly installed roofing materials from unnecessary construction activity and traffic until all construction activity on roof has been completed.
- G. Protect newly installed roofing materials until all construction activity on roof has been completed. Upon completion of all roof work, inspect installed roofing system for possible damage. Repair and/or replace any damaged materials, at no cost to the owner, prior to substantial completion of entire building project.

3.05 Installation, Completion

- A. Upon substantial completion of the Roof System installation; arrange for field inspection, by Manufacturer's Technical Representative, to establish compliance of installation with Manufacturer's requirements for warranty.
- B. Repair or remove and replace materials or components that do not meet the Manufacturer's material specifications, or specified workmanship requirements, and do not meet the Manufacturer's warranty requirements, at no cost to the Owner.
- C. If necessary, or required, engage qualified, independent, testing lab to verify compliance of repairs or replacement to meet Manufacturer's warranty requirements, at no cost to the Owner.

3.06 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials.
- B. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- C. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Sheet Metal Flashing and Trim as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. Aluminum Association (AA)
 - 1. Designation System for Aluminum Finishes
- B. American Architectural Manufacturers Association (AAMA)
 - 1. AAMA 2605 - Specifications for Paint and Architectural Powder Coat
- C. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM B69 – Standard Specification for Architectural Rolled Zinc
 - 2. ASTM 167 – Standard Specification for Stainless Steel
 - 3. ASTM B209 - Standard Specification for Aluminum and Aluminum Alloy Sheet
- D. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
 - 1. Architectural Sheet Manual, 7th Edition

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data – all preformed components, manufactured as part of a system
- B. Shop Drawings: Submit detailed drawings, for each metal type, that show:
 - 1. Flashing and Trim locations and shape, with critical dimensions
 - 2. Details, of each metal type, indicating and showing:
 - a. Metal Type and thickness
 - b. Finish
 - c. Fastening
 - d. Joints
 - e. Corners
 - f. Terminations
 - g. Separation from dissimilar metal
 - h. Expansion and Seismic movement accommodation
 - 3. Coordination drawings, including elevations, sections, and details exhibiting structural support to confirm compliance with design intent and relationship to adjacent building elements.
- C. Samples – Minimum 3-inch by 5-inch, flat material sample One (1) sample of each metal and finish type

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Sheet Metal Flashing and Trim will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Contractor shall coordinate installation of adjacent materials, to ensure continuity of integrity of closure and weathertightness. Installer shall not undo work of others without their acknowledgement and/or oversight.
- D. It is assumed that flashing and trim work associated with the wall panel materials will be installed and completed by their respective, authorized, installers. If this is not the case; the installer of the flashing and trim associated with those products shall follow the criteria of those respective Specification Sections and be authorized to install the flashing and trim detail by the respective Panel Manufacturer, so as not to void the warranty or the eligibility to obtain such a warranty.

1.06 Delivery, Storage, and Handling

- A. Deliver Sheet Metal Flashing and Trim in original packaging and containers with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged containers in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Sheet Metal Flashing and Trim that fails due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.
- D. Installer shall replace Sheet Metal Flashing and Trim that fails due to installation workmanship within the specified warranty period, at no cost to the buildingowner.
- E. Installer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- B. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Flashing and trim for a specified Wall Panel system shall be procured with the wall panels specified or from a Manufacturer approved vendor, so as not to void the warranty or eligibility for a warranty.

2.03 Materials

- A. Sheet Metal:
 - 1. Sheet metal flashing, and trim shall comply with applicable recommendations of SMACNA's "Architectural Sheet Metal Manual."
 - 2. Fabricate flashing and trim to fit substrate and result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered prior to fabricating.
 - 3. Exposed sheet metal shall be without excessive oil canning, buckling, and tool marks and shall be true to line and levels indicated, with exposed edges folded back to form hems.
- B. Sheet Metal Finish
 - 1. Sheet metal which is not exposed, shall be standard galvanized metal. All other sheet metal shall be factory finished as noted on the Drawings.
 - 2. Visible flashings shall be field primed and painted to match finished membrane.
- C. Aluminum:
 - 1. Alloy and temper recommended by aluminum flashing manufacturer for specific use and finish.
 - 2. Aluminum gauge is approximate as there is no aluminum standard:
 - a. Flashing – 20 gauge, .0320-inch
 - b. Trim – 16 gauge, .050 -inch
 - c. Coping – 16 gauge, .050 -inch
- D. Aluminum Finish:
 - 1. Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.
 - 2. Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system complying with AAMA 2605. As selected by Architect from manufacturer's full standard range of color options.
 - 3. Mill Finish Aluminum per with a minimum thickness of 0.050 inch (1.2 mm).
- E. Joints and Seams:
 - 1. Provide for Thermal and Seismic Movement, as stipulated by Code, without compromising integrity of joints.
 - 2. Space movement joints at maximum of 10 feet with no joints allowed within 24-inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with mastic sealant (concealed within joints).
 - 3. Fabricate non-moving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer.
 - 4. Joints to accommodate elastomeric sealant in compliance with SMACNA standards.
- F. Fasteners:
 - 1. Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
 - 2. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
 - 3. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, non-corrosive metal recommended by sheet metal manufacturer.
 - 4. As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.
- G. Adhesives and Sealants:
 - 1. Adhesives: As recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
 - 2. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4-mm) dry film thickness per coat.
 - 3. Mastic Sealant: Nonhardening, nonskinning, nondrying, nonmigrating sealant.

4. Elastomeric Sealant: As recommended by sheet metal manufacturer and fabricator of components being sealed. Comply with requirements for joint sealants as specified.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.
- D. Do not install in inclement weather or over a damp substrate.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install work to be truly straight and square and per accepted industry standards.
 1. Fabricate and install work with lines and corners of exposed units true and accurate.
 2. Form exposed faces free of buckles, excessive waves, and avoidable tool marks considering temper and reflectivity of metal.
 3. Shim and align flashing & trim within installed tolerance of ¼ -inch in 20' -0"
 4. All seams shall be of uniform appearance and dimensions, straight and level with minimum exposure of solder.
 5. Except as otherwise shown, fold back sheet metal to form an open hem (water check) on concealed side of exposed edges.
 6. Form seams to be weatherproof, leaving room for expansion and contraction with specified and required tolerances.
- C. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Field verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- D. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations. Fill joint with sealant and form metal to completely conceal sealant.
- E. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams.
- F. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer.
- G. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
- H. Counterflashing: Coordinate installation of counterflashing with assemblies to be protected. Install counterflashing in reglets or receivers. Secure in a waterproof manner.

- I. Roof-Drainage System: Install Gutters and Downspouts with straps and anchors as recommended by SMACNA or the item manufacturer, to drain roof surface in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation.
- J. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Horizontal Standing Seam Zinc Wall Panels and components as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM B69-1 -Standard Specification for Rolled Zinc.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings: Submit detailed drawings that show:
 - 1. Panel profile
 - 2. Panel layout, configuration, and panel dimensions
 - 3. Coordination drawings, including elevations, sections, and details exhibiting structural support to confirm compliance with design intent and relationship to adjacent building elements.
- C. Samples:
 - 1. Three (3) – 3-inch by 5-inch flat, material finish samples
 - 2. Two (2), full size samples
 - a. Two (2) full size, 12 -inch long panels with interlocking horizontal standing seam joint between the panels, to show the how the panels overlap, forming a weathertight seal
 - b. Include interlocking (horizontal) gasket and support fasteners
- D. Certification Data
- E. Warranty

1.05 Quality Measures

- A. Manufacturer shall have, a minimum of, five (5) years experience in the production of Zinc, Horizontal Standing Seam Wall Panels. Manufacturer shall demonstrate experience with examples of similar, finished, projects, including location, project type, size, and Client, if requested.
- B. Manufacturer shall guarantee for a period of two years, from the date of acceptance of the finished Building for occupancy, that the Zinc, Standing Seam Wall Panels will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately.

- C. Installing Contractor shall be Certified, by the Manufacturer, as an experienced installer. Contractor shall have successfully installed zinc panels on a minimum of 2 (two) projects of similar scale.
- D. Alternatively, the Manufacturer shall provide training to the Installing Contractor and:
 - 1. Provide proof of satisfactory completion of the training
 - 2. Provide an authorized Manufacturer's Representative, experienced with the installation of Zinc, Standing Seam Wall Panels, to be on-Site, full time, for the duration of the installation, at no additional cost to the Owner.
- E. Installing contractor shall guarantee, the installation, for a period of two years, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation. Contractor shall be responsible for any damage to adjacent materials and/or finishes resulting from failures associated with the installation.
- F. Require all personnel to wear clean white cotton gloves when handling and installing Zinc, Standing Seam Wall Panels and accessories when no strippable film is present.

1.06 Delivery, Storage, and Handling

- A. Deliver Zinc, Standing Seam Wall Panels and components to Project Site in Manufacturer's original packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, product type, and local contact information.
- B. Handle Zinc, Wall Panels and components in strict compliance with Manufacturer's written instructions and recommendations.
- C. Require all personnel to wear clean white cotton gloves when handling Zinc, Wall Panels and components when no strippable film is evident.
- D. Handle and protect Panels and components from physical damage, during transport. Store materials in their original undamaged containers in a clean, protected location, above the ground.
- E. Do not store panels or components in contact with other materials that might cause staining, denting, or other surface damage. Avoid direct contact of incompatible materials including but not limited to copper, red rosin paper and masonry cleaning solutions.
- F. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of two years.
- B. Manufacturer shall replace Zinc, Horizontal Standing Seam Panels and/or components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner. Manufacturer shall be responsible for repair, or replacement, of any damages to adjacent materials and/or finishes associated with failure of the Insulated Metal Wall Panels.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality performance criteria and aesthetic desired.

- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. Procure Zinc, Horizontal Standing Seam Panels and associated components from a single Manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- D. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. RHEINZINK America, Inc.

2.03 Materials

- A. *RheinZink*, Zinc, Horizontal Standing Seam Wall Panels
 - 1. Minimum Panel Thickness: 22 gauge
 - 2. Horizontal Orientation with 1½-inch Double Lock Standing Seam
 - 3. Panel Vertical Height: 16 inches, Center-to-Center on Double Lock Standing Seams
 - 4. Panel Length: Uninterrupted with no visible vertical joints, if practicable
 - 5. Finish: prePatina Blue-Grey, Titanium Zinc Alloy, Architectural Rolled Zinc – Type 1
 - 6. Details: (*as shown on Drawings*)
 - a. Outside Corner: SSF H4b, Option 2
 - b. Inside Corner: similar to SSF H5a, Option 1
 - c. Coping: SSF H7b, Option 2
 - 7. Accessories and Trim: As recommended by Manufacturer for complete finished installation. Exposed trim and flashing, to be zinc, finished to match wall panels.

PART 3 EXECUTION

3.01 Design/ Preparation

- A. Prior to preparation and submittal of Shop Drawings, review Construction Documents for consistency of Architectural intent with products specified.
- B. Review Architectural and Structural design details for adequacy of support, under seismic conditions, and compliance with 2016 California Building Code requirements.

3.02 Installation/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Confirm that the panels arrived, on Site, undamaged. Contractor shall immediately remove and replace any damaged panels
 - 2. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 3. Verify that locations, elevations, and dimensions are as indicated on the drawings.
 - 4. Verify that the structural support elements are as indicated on the Drawings and consistent with the Shop Drawings.
 - 5. Confirm that the structure, adjacent materials, products, and finishes are ready for installation of the Zinc, Horizontal Standing Seam Panels.

- B. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.03 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Installation shall be in accordance with Manufacturer's written instructions, guidelines and recommendations.
- C. Require all personnel to wear clean white cotton gloves when handling Zinc, Wall Panels and components when no strippable film is evident.

3.04 Installation, Specific

- A. Install panels plumb, level, and true-to-line to dimensions and layout indicated on shop drawings.
- B. Place panel fasteners through leading edge face metal, concealed within the joint of the panel. Secure units to the structural supports. Space fasteners as recommended by manufacturer or otherwise indicated on the approved shop drawings.
- C. Place trim and trim fasteners only as indicated in the Details on the reviewed Shop Drawings.
- D. Provide systems and detail connections, which allow for thermal movement
- E. Provide anchors and attachments, which will resist imposed wind and seismic loads as required by code without permanent deflection or deformation. Information on Drawings is intended for information only. System performance, based on project conditions and compliance with applicable codes and loading requirements, shall be the responsibility of the panel fabricator and installer.
- F. Sealants:
 - 1. Seam Sealing Tape: Pressure-sensitive 100 per cent solid polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, non-sag, non-toxic non-staining tape.
 - 2. Joint Sealant: pH neutral sealant.
 - 3. Backer rod shall be extruded polyethylene foam.
 - 4. If applicable; Clean and prime surfaces to receive exterior exposed sealants in accordance with sealant manufacturer's recommendations.
 - 5. Follow sealant manufacturer's recommendations for joint width-to-depth ratio, application temperature range, size and type of backer rod, and compatibility of materials for adhesion.
 - 6. Direct contact between butyl and silicone sealants shall not be permitted.

3.05 Field Quality Control

- A. Field Water Test: After completing portion of metal wall panel assembly including accessories and trim, test a 2-bay area selected by the Architect for water penetration in accordance with AAMA 501.2 or ASTM E1105.
- B. This product has been incorporated into previous work on Site and, pending review and approval, shall be used as the standard for the work on this Phase of the Work.

3.06 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities.

- B. Clean exposed metal surfaces of substances that would interfere with uniform oxidation and weathering and as recommended by panel manufacturer and maintain in a clean condition during construction. Never apply cleaner directly to zinc surface.
- C. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection.
- D. Repair any damage found, at no cost to the owner.
- E. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Roof Accessories as shown on the drawings and as specified herein, including, but not limited to:
 - 1. Equipment Curbs
 - 2. Combination Roof and Overflow Drains
 - 3. Horizontal Sliding Roof Access Hatch, with Guards

- B. Fall Protection: To preclude the need for Guard Railing on the Roof, per 2022 CBC, Title 24, Part 2 (Vols 1&2) Chapter 10, Section 1015.2; Contractor shall provide the Design and Installation of Personal Fall Arrest Anchorage Connector Devices, in compliance with ANSI/ASSE Z359.1, as permitted by 2022 CBC, Title 24, Part 2 (Vols 1&2) Chapter 10, Section 1015.6, Exception.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.

- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. Aluminum Association (AA):
 - 1. AA 6063 – T5 - Minimum Expected Mechanical Properties for Extrusions, Architectural Alloy

- B. American National Standard Institute (ANSI):
 - 1. ANSI Z359.1 - Safety Requirements for Personal Fall Arrest Systems
 - 2. ANSI Z359.6 - Specifications and Design Requirements for Active Fall Protection Systems

- C. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E 283 - Test Method for Rate of Air Leakage
 - 2. ASTM E 330 - Structural Performance
 - 3. ASTM E 547 - Test Method for Water Penetration

- D. Occupational Health and Safety Administration (OSHA):
 - 1. OSHA 1926.502 – Fall Prevention Systems Criteria and Practices

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data Sheets, for each product specified

- B. Shop Drawings showing:
 - 1. Layout/ Configuration
 - 2. Critical dimensions
 - 3. Anchorage and/or structural support

- C. Provide an Engineered Personal Fall Arrest Anchorage Connector (Fall Protection) System in compliance with ANSI/ASSE Z-359.1, and OSHA 1926.502(d)(8).
 - 1. Submit Drawings and Calculations sealed and signed by a Professional Engineer registered in California, showing the configuration, installation, and components required for a fully compliant, and operational Fall Protection System. Including structural capacity calculations, proving code compliance.
 - 2. Compliance Testing Reports, comprised of testing parameters, testing performance, and Certification of Compliance by Independent Third-party Testing Lab/Authority.
 - 3. List of all components and devices that are a part of the complete Fall Protection System that will be provided as a part of the complete, and tested, operational system.
 - 4. Operation and Maintenance Manual for the entire Fall Protection System.
 - 5. Laminated narrative and graphic instructions on the Personal Fall Arrest Anchorage Connector (Fall Protection) System use and safety parameters.
 - 6. Warranty

1.05 Delivery, Storage, and Handling

- A. Deliver Roof Accessories specified to Project Site in original packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Roof Accessories from physical damage. Store materials in their original undamaged packaging in a clean, protected location.
- C. Any materials or products which are damaged or found to have defects shall be removed, legally disposed of, and replaced at no expense to the District..

1.06 Quality Measures

- A. Professional Engineer Qualifications:
Professional Engineer registered to practice in California and who is experienced in providing engineering services associated with Personal Fall Arrest Anchorage Connector (Fall Protection) System Components and Devices.
- B. Obtain all Fall Arrest Anchorage Connector components and devices from a single manufacturer.

1.07 Warranty

- A. Contractor shall replace Roof Accessories, specified in this Section, that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- B. Manufacturer's warranty for Equipment Curbs shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.
- C. Manufacturer's warranty for Sliding Roof Access Hatch and Fall Protection System shall commence on date of written acceptance of completed installation and shall extend for Ten (10) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials and products from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials and Products shall comply with this Section and applicable State or Local requirements.

2.02 Products

- A. Equipment Curbs:
 - 1. Prefabricated roof curbs
 - 2. Galvanized Steel: 20, 18, 16 or 14 gauge as required per ASTM A653/ 653M
 - 3. Welding: Continuous - water and airtight, Corners and Seams
 - 4. Internally reinforced with angles 48" OC
 - 5. Factory installed wood nailer
 - 6. Rigid Insulation: Internal, 1 ½" thick, 3 lbs. density
 - 7. Curb Height: 8" above finished roof deck or as detailed
 - 8. Top of all roof curbs shall be level, with built-in pitch for deck slope

- B. Combination Roof Drains:
 - 1. Low silhouette dome, combination roof and overflow drain. Similar to Zurn Z-165
 - 2. Double Top-set Deck Plate, 32 -inch x 16 -inch
 - 3. 4 -inch nominal pipe size
 - 4. 8³/₈ -inch diameter body dimension
 - 5. Galvanized cast iron
 - 6. Bottom outlet
 - 7. 2 -inch, external water dam on overflow

- C. Roof Hatch:
 - 1. Pre-fabricated horizontal sliding access hatch
 - 2. Hatch Panel:
 - a. One piece, nominal 2" thick
 - b. Internal welded aluminum framework
 - c. Bonded aluminum sheeting
 - d. Integrated, full length, interior and exterior pull handle
 - 3. Insulation: R-10, Rigid polystyrene between internal framing members
 - 4. Track and Frame: Utilize track mounting frame, on four aluminum rollers
 - 5. Weatherseals: EPDM bulb, full perimeter
 - 6. Hardware/Fasteners: Stainless Steel 18-8
 - 7. Finish: Mill Finish Aluminum at all exposed surfaces
 - 8. Integrated Roof Curb+
 - 9. OSHA Compliant Safety Railing:
 - a. Permanent, four-sided, hatch opening protection
 - b. Self-closing gate
 - c. Integrated horizontal grab bars

- D. Fall Protection System:
 - 1. Complete Personal Fall Arrest Anchorage Connector (Fall Protection) System, including all components and devices.
 - 2. Permanent structural anchors, lines, and connectors.
 - 3. Minimum of Four (4) individual, personnel, harnesses, retractable safety lanyards, and connectors.
 - 4. Structural reinforcement criteria and specialty components, as may be required.

2.03 Manufacturers

- A. Provide Roof Curbs from the following manufacturer, or equal:
 - 1. Acuity
 - 2. HRANEC Corporation
 - 3. Thybar Corporation

- B. Provide Roof Drains from the following manufacturer, or equal:
 - 1. Zurn Industries, LLC

- C. Provide Horizontal Sliding Roof Hatch from the following manufacturer, or equal:
 - 1. PS Access Solutions, *Slidewise Roof Hatch*
- D. Provide Fall Protection Anchor Posts from the following manufacturer, or equal:
 - 1. Guardian Fall Protection

2.04 Performance

- A. Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Examination/ Preparation for Fall Protection Installation

- A. Prior to installation of Fall Protection System, examine framing, reinforcement, and substrate and verify that conditions comply with structural requirements for proper system performance.

3.03 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Roof Accessories in accordance with manufacturer's written instructions and per accepted industry standards.

3.04 Adjustment and Inspection

- A. Ensure all manufactured anchors have been installed in accordance with fall protection manufacturer's engineering documentation and specifications.
- B. Provide plan drawings with any deviations in anchor locations as installed.
- C. Completed Fall Protection System, and individual devices shall be tested, in place, per Manufacturer's written instructions.

3.05 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Joint Sealants as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM D624 - Test for Tear Strength of Vulcanized Rubber and Thermoplastic Elastomers
 - 2. ASTM C719 - Standard Test for Adhesion and Cohesion of Elastomeric Joint Sealants
 - 3. ASTM C794 - Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
 - 4. ASTM C834 - Specification for Latex Sealants
 - 5. ASTM C920 - Specification for Elastomeric Joint Sealants
 - 6. ASTM C1087 - Test for Compatibility of Liquid Sealants with Accessories in Glazing Systems
 - 7. ASTM C1193 - Guide for Use of Joint Sealants.
 - 8. ASTM C1330 - Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants
- B. California Department of Public Health:
 - 1. Standard for the Testing and Evaluation of Volatile Organic Chemical Emissions
- C. Code of Federal Regulations (CFR):
 - 1. 40 CFR, Part 59, Subpart D - National Volatile Organic Compound Emission Standards

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data for each type of joint sealant product specified, including:
 - 1. Preparation and installation instructions and recommendations
 - 2. Drawings illustrating manufacturer's recommended sealant joint profiles and dimensions
 - 3. Product Certificates
- B. Two (2) sets of sealant color samples for 'Color Selection' of joint sealants exposed to view.
- C. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.05 Quality Measures

- A. Procure Joint Sealants and components from a single manufacturer to provide for standardization of performance, maintenance and manufacturer's service.
- B. Manufacturer shall guarantee for a period of Two (2) years, from the date of acceptance of the finished Building for occupancy, that the Joint Sealants will be free of defects in materials, and that defective materials will be repaired or replaced immediately, after proper notification.
- C. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Joint Sealants, and components, to Project Site in original packaging and containers with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, type and local contact information.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged containers in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Manufacturer shall replace Joint Sealants that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- B. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for Two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Dow
 - 2. Pecora
 - 3. Sonneborn
 - 4. Tremco, Inc.

2.03 Materials

- A. Provide sealants and sealant primers complying with the testing and product requirements of the California Department of Health Services.
- B. Provide joint sealants and accessory materials that are compatible with one another, and with adjacent materials, as demonstrated by joint sealant manufacturer.

2.04 Silicone Joint Sealants

- A. Single-Component, Nonsag, Non-traffic, Class 100/50, Neutral-Curing
- B. Single-Component, Nonsag, Traffic, Class 100/50, Neutral-Curing
- C. Multicomponent, Nonsag, Non-traffic, Class 50, Neutral-Curing
- D. Multicomponent, Pourable, Traffic, Class 100/50, Neutral-Curing
- E. Mildew-Resistant, Single-Component, Nonsag, Non-traffic, Class 25, Neutral-Curing

2.05 Urethane Joint Sealants

- A. Single-Component, Nonsag, Non-traffic, Class 100/50, Urethane
- B. Single-Component, Nonsag, Traffic, Class 25, Urethane
- C. Multicomponent, Nonsag, Non-traffic, Class 50, Urethane

2.06 Latex Joint Sealants

- A. Acrylic or Siliconized Acrylic Latex, Type OP (Opaque), Grade NF

2.07 Solvent Release, Curing, Joint Sealant

- A. Acrylic-Based
- B. Butyl-Rubber Based

2.08 Preformed Joint Sealants

- A. Standard sealant consisting of pre-cured, low-modulus, silicone extrusion, combined with a neutral-curing silicone sealant, for bonding to substrates.
- B. Standard pre-formed, pre-compressed, open-cell, urethane foam sealant with a minimum density of 10 lb/ft³ and impregnated with a nondrying, water-repellent agent. Manufactured in roll or stick form to fit joint widths indicated; coated on one side with a pressure-sensitive adhesive and covered with protective wrapping.

2.09 Acoustical Joint Sealants

- A. Standard, nonsag, paintable, nonstaining latex sealant complying with ASTM C834.
 - 1. Product effectively reduces airborne sound transmission through joints and openings.

2.10 Joint Sealant Backing

- A. Sealant Backing of non-staining material, compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications by sealant manufacturer
- B. Cylindrical Sealant Backing, Type C (closed-cell material with a surface skin), approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and contribute to producing optimum sealant performance.

- C. Bond-Breaker, Polyethylene or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.11 Miscellaneous Materials

- A. Primer:
Material recommended by manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces:
Chemical cleaners, acceptable to manufacturer, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces.
- C. Masking Tape:
Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the joint surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Joint Sealants in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Surface Cleaning of Joints:
Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete
 - b. Masonry
 - c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel
 - d. Glazed surfaces of ceramic tile.
- D. Joint Priming:
Prime joint substrates per Manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- E, Masking Tape:
Use masking tape to prevent contact of sealant or primer with adjoining surfaces and preclude staining and/or damaged that could result from such contact.

3.03 Installation, Joint Sealants

- A. Install Manufacturer recommended sealant backing to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability
 1. Do not leave gaps between ends of sealant backings
 2. Do not stretch, twist, puncture, or tear sealant backings
 3. Remove, and replace, absorbent sealant backings that have become wet prior to sealant application.
- B. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- C. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates
 2. Completely fill recesses in each joint configuration
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- D. Tooling of Nonsag Sealants:
Immediately after sealant application, and prior to skinning or curing begins, tool sealants to form smooth, uniform beads, and to eliminate air pockets, ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints
 2. Use tooling agents approved in writing by Manufacturer, that do not discolor sealants or adjacent surfaces
 3. Provide concave joint profile
 4. Provide flush joint profile where indicated
 5. Provide recessed joint configuration of depth and at locations indicated
- E. Installation of Preformed Silicone-Sealant System: Comply with the following requirements:
 1. Apply masking tape to each side of joint, outside of area to be covered by sealant system.
 2. Apply silicone sealant to each side of joint to produce a bead of size complying with preformed silicone-sealant system manufacturer's written instructions and covering a bonding area of not less than $\frac{3}{8}$ -inch. Hold edge of sealant bead $\frac{1}{4}$ -inch inside masking tape.
 3. Within 10 minutes of sealant application, press silicone extrusion into sealant to wet extrusion and substrate. Use a roller to apply consistent pressure and ensure uniform contact between sealant and both extrusion and substrate.

4. Complete installation of sealant system in horizontal joints before installing in vertical joints. Lap vertical joints over horizontal joints. At ends of joints, cut silicone extrusion with a razor knife.
- F. Installation of Preformed Foam Sealants:
Install each length of sealant, per Manufacturer's written instructions, immediately after removing protective wrapping. Do not pull or stretch material. Produce seal continuity at ends, turns, and intersections of joints.
- G. Acoustical Sealant Installation:
At sound-rated assemblies and elsewhere indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations.

3.04 Protection and Cleaning:

- A. Clean off excess sealant, or sealant smears adjacent to joints, per the Manufacturer's written instructions and recommendations, as the Work progresses.
- B. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- C. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Metal Doors and Frames as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
 - 1. ANSI A115 - Specification for Preparation of Steel Doors and Frames for Hardware.
 - 2. ANSI/SDI A250.8 – Specifications for Standard Steel Doors and Frames
 - 3. ANSI/SDI A250.11 – Recommended Erection Instructions for Steel Frames
- B. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E 90 - Standard Test for Laboratory Measurement of Sound Transmission Loss
 - 2. ASTM A153 – Standard Specification for Zinc Coating on Steel Hardware
 - 3. ASTM A366 – Standard Specification for Cold Rolled Steel Sheet
 - 4. ASTM E 413 - Classification for Rating Sound Insulation.
 - 5. ASTM A569 – Standard Specification for Steel Sheet
 - 6. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 7. ASTM A924 - Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process
- C. Hollow Metal Manufacturers Association (HMMA):
 - 1. Hollow metal work shall conform to HMMA standards for Hollow Metal Doors and Frames, unless more stringent requirements are specified
 - 2. 820 – Hollow Metal Frames
TN01 – Grouting Hollow Metal Frames
- D. Steel Door Institute (SDI)
 - 1. SDI 111 - Recommended Standard Details for Steel Doors & Frames

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings:
 - 1. Schedule of doors and frames
 - 2. Elevations of frames and doors
 - 3. Details
 - 4. Hardware - Location and installation requirements

- C. Samples
 - 1. Three (3), 4 -inch by 4 -inch sample of annealed surface finish
- D. Warranty

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that Metal Doors and Frames will be free of defects in materials and factory workmanship. Defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Contractor shall be Certified by the Manufacturer and be knowledgeable in handling and installing Galvannealed Doors and Frames, intended to have Galvannealed finish as exposed surface.

1.06 Delivery, Storage, and Handling

- A. Deliver Metal Doors and Frames to Project Site in original protective wrapping with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Metal Doors and Frames from physical damage. Store materials (Doors and Frames – vertically) in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Metal Doors and Frames that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to requirement compliance, products shall be from the following manufacturers, or equal:
 - 1. Ceco
 - 2. Republic
 - 3. Steelcraft

2.03 Materials

- A. Exterior Doors and Frames specified shall have Galvannealed finish as the exposed surface finish. Adjacent exterior walls will be finished, in part, with raw zinc metal panels. Intent is for doors and frames to be compatible with adjacent zinc wall panels.
- B. Interior Frames shall be shop primed for finish painting in field
- C. Hot-Rolled Steel Sheets:
ASTM A569, CS (Commercial Steel), Type B; free of scale, pitting or surface defects
- D. Cold-Rolled Steel Sheets:
ASTM A 366, CS (Commercial Steel), Type B
- E. Metallic-Coated (Galvannealed) Steel Sheets:
ASTM A 653, CS (Commercial Steel), Type B; with A60, Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- F. Supports and Anchors:
Fabricate of not less than 16-gage sheet metal. Galvanize units to be built into exterior walls
- G. Inserts, Bolts, and Fasteners:
Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls

2.04 Fabrication, General

- A. Fabricate metal units to be rigid, neat in appearance, and free from defects, warp, or buckle. Accurately form metal to required sizes and profiles.
 - 1. Exterior Doors and Frames specified shall have Galvannealed finish as the exposed finish.
 - 2. Interior Frames shall be shop primed for painting.
 - 3. Fit and assemble units in the manufacturer's plant including units which are approved to be partially disassembled and field spliced.
 - 4. Clearly identify work that cannot, where approved, be permanently factory assembled before shipment, to assure proper assembly at the project site.
 - 5. Finished assembly of both Doors and Frames shall have an even uniform appearance.
- B. Unless recommended otherwise, provide countersunk flat head fasteners, when exposed
- C. Prepare doors and frames to receive finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware.
- D. Reinforce metal units to receive surface applied hardware. Drilling and tapping for surface applied finish hardware may be done at project site.
- E. Locate finish hardware as shown on final Shop Drawings, or if not shown, in accordance with "Recommended Locations for Builder's Hardware for Custom Steel Doors and Frames," published by the Door and Hardware Institute.
- F. Sound-Rated (Acoustical) Assemblies:
Where shown or scheduled, provide door and frame assemblies that have been fabricated as sound-reducing type, tested in accordance with ASTM E 90, and classified in accordance with ASTM E 413, with sound ratings of STC 33 or better.

2.05 Doors

- A. Hot-dip (Zinc-Iron Alloy) galvanized steel, Class A60, per ASTM A653
 - 1. 16-gauge face sheet
 - 2. Galvanized components and internal reinforcements
 - 3. Close tops of doors to eliminate moisture penetration
 - 4. Galvanized steel top caps are permitted
- B. Hardware Reinforcements:
 - 1. Hinge reinforcements for full mortise hinges: minimum 7 gauge
 - 2. Lock reinforcements: minimum 16 gauge
 - 3. Closer reinforcements: minimum 14 gauge, 20-inch long
 - 4. Galvanized or galvanized hardware reinforcements, per manufacturer's recommendations
 - 5. Projection welded hinge and lock reinforcements to the edge of the door
 - 6. Provided adequate reinforcements for other hardware as required
- C. Construction
 - 1. 1- $\frac{3}{4}$ inches thick, seamless hollow construction.
 - 2. For single-acting swing doors, bevel both vertical edges $\frac{1}{8}$ inch in 2 inches
 - 3. For double-acting swing doors, round vertical edges with 2- $\frac{1}{8}$ inch radius
 - 4. Reinforce with rigid 16-gauge tubular frame where stiles and rails are less than 8 inches
- D. Full Flush:
 - 1. Doors shall have Galvanized finish as the exposed surface finish. Intent is for doors to be compatible with adjacent zinc wall panels.
 - 2. Full Flush, 16 -gauge face
- E. Louvered:
 - 1. Louvers shall have Galvanized finish as the exposed surface finish.
 - 2. Full Louvered, 18 -gauge blades
 - 3. Storm resistant, positive draining, non-vision
 - 4. Interior set, insect screen
 - 5. Minimum 45% free area
 - 6. Interior set, acoustical adaptor

2.06 Frames

- A. Hot-dip (Zinc-Iron Alloy) galvanized steel, Class A60, per ASTM A653
 - 1. 14-gauge
 - 2. Galvanized components and internal reinforcements
- B. Flush Frames
 - 1. Set-up and fixed with temporary shipping bars, per Manufacturer, to preclude damage to Galvanized finish. Factory die-mitered corner connections reinforced with four integral tabs to secure and interlock at jambs to head, or as recommended by Manufacturer.
 - 2. 2 -inch face, standard stop. Confirm required depth, in field
 - 3. Provide frames with a minimum of six wall anchors and two adjustable base anchors
- C. Hardware Reinforcements:
 - 1. Hinge reinforcements: minimum 7 gauge
 - 2. Strike reinforcements: minimum 16 gauge
 - 3. Closer reinforcements: minimum 14 gauge
 - 4. Galvanized or galvanized hardware reinforcements, per manufacturer's recommendations
 - 5. Projection welded hinge and strike reinforcements to the frame
 - 6. Provided adequate reinforcements for other hardware as required

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the opening surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Exterior Doors and Frames specified shall have Galvannealed finish as the exposed surface finish. Contractor shall install Doors and Frames in strict accordance with manufacturer's written instructions to preclude damage to Galvannealed finish. Damaged Galvannealed finish shall be repaired to be indistinguishable, per Manufacturer's written instructions or removed and replaced at Contractor's expense.
- C. Contractor has the option to install temporary "construction" doors, to preclude damage to Galvannealed finish, and install specified doors and hardware prior to final inspection at substantial completion. Contractor shall exercise this option at the Contractor's sole expense. Contractor assumes any risk, including delays, associated with exercising this option.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 **GENERAL**

1.01 **Scope of Work**

- A. Furnish all labor, equipment, materials, and incidentals required, and install Flush Wood Doors as shown on the drawings and as specified herein.

1.02 **Related Work**

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 **Standards**

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI)
- B. American Society for Testing and Materials (ASTM) International:
- C. Architectural Woodwork Institute (AWI):
 - 1. Architectural Woodwork Standards, 1st Edition
- D. Window and Door Manufacturers Association (WDMA):
 - 1. "Industry Standard for Interior Architectural Wood Flush Doors" (ISIA).

1.04 **Submittals**

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Schedule and Shop Drawings
 - 1. Hardware preparation
- C. Samples:
 - 1. Three (3) – 4 -inch by 4 -inch samples of Manufacturer's standard stain, on specified wood, for selection
- D. Warranty

1.05 **Quality Measures**

- A. Manufacturer shall guarantee for a period of ten (10) years, from the date of acceptance of the finished Building for occupancy, that the Flush Wood Doors will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.

- B. Contractor shall guarantee, the installation, for one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to installation.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original protective wrapping with seals unbroken. All packaging shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Flush Wood Doors from physical damage. Store materials in their original packaging in a vertical position, in a clean, dry, protected location.
- C. Any materials or products which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of ten (10) years.
- B. Manufacturer shall replace Flush Wood Doors that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for ten (10) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Coordinate hardware preparation of doors with hardware preparation of metal frames
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Wood Doors

- A. Full Flush, Solid Core:
 - 1. 1- $\frac{3}{4}$ -inch, 3 Ply, Custom Grade 'A'
 - 2. Plain sliced, Book match, Center balance match
 - 3. Ash veneer with Clear, open-grain, satin finish
 - 4. WDMA I.S.1-A Performance Grade: Heavy Duty

2.03 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Doormerica
 - 2. Lux Doors, Corp.
 - 3. Metrie EI & EI Wood Products

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that frame locations, elevations, and dimensions are as scheduled, indicated on the drawings, and ready installation of doors.
 - 3. Do not deliver or install doors until spaces are enclosed, weathertight, dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels for the remainder of the construction period.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Flush Wood Doors in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Align and fit doors in frames with $\frac{1}{8}$ -inch uniform clearances and bevels.
 - 1. Do not trim stiles and rails in excess of limits set by manufacturer
 - 2. Prepare doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
- D. Rehang or replace doors that do not swing or operate freely.
- E. Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Access Panels as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Access Panels will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original containers with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged containers in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Access Panels that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and any applicable State or Local requirements.
- D. Coordinate panel door size, with required access function and required depth of access

2.02 Materials

- A. Recessed, hinged, access door at gypsum wallboard partition or ceiling:
 - 1. 16 -gauge welded aluminum inner and outer frame with $\frac{1}{16}$ -inch reveal
 - 2. Flush, 'slotted,' access cam
 - 3. White powder coat finish, for painting in field
 - 4. 1 -inch drywall bead at outer frame
 - 5. $\frac{5}{8}$ -inch recess for gypsum wallboard inlay

2.03 Materials

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Acudor
 - 2. J.L. Industries
 - 3. Nystrom

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Access Panels in accordance with manufacturer's written instructions and per accepted industry standards.

- C. Inlay gypsum wallboard to match immediately adjacent wall and finish to match
- D. Test, for proper operation, immediately following installation. Adjust as necessary

3.03 Protection and Cleaning:

- A. Clean installed Access Panels and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Sliding Aluminum-Framed Glass Doors, with Exterior Retractable Screen as shown on the drawings and as specified herein.

- B. Window Wall:
Sliding Aluminum-Framed Glass Door System will function as a window wall, as shown on the Drawings. The System will be comprised of seven fixed panels and two operable, Sliding Glass Door panels. One Sliding Glass Door panel will be located at each end of the window wall. Bottom, sill plate, of Sliding Aluminum-Framed Glass System (window wall) will be 3'-4" Above Finished Floor, as shown on the drawings. Framing and operating hardware shall be located accordingly. All operation will be interior, with no exterior access.

- C. Exterior Retractable Door Screen:
Vertical side coiling screen, to be available for use only when Sliding Glass Door is open. This is to provide optimal viewing, which precludes the use of a fixed screen. Retractable screen shall be operable on the interior side, only, and at a similar height as the Sliding Glass Door.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.

- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage
 - 2. ASTM E330 - Standard Test Method for Structural Performance
 - 3. ASTM E331 - Standard Test Method for Water Penetration
 - 4. ASTM E1425 - Standard Practice for Determining the Acoustical Performance

- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 507 -Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems
 - 2. AAMA 1503 -Test Method for Thermal Transmittance and Condensation Resistance

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

- B. Shop Drawings

- C. Warranty

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of two (2) years, from the date of acceptance of the finished Building for occupancy, that the Sliding Aluminum-Framed Glass Doors, with Exterior Retractable Screen will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of two (2) year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original protective wrapping with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of two (2) years.
- B. Manufacturer shall replace Sliding Aluminum-Framed Glass Doors, and/or Exterior Retractable Screen, or any components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's, or Product, name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. Procure Sliding Aluminum-Framed Glass Door System and associated components from a single manufacturer to provide standardization of appearance, maintenance, and manufacturer's service. Exterior Retractable Screens, and associated components, if necessary, may be procured from a separate and different Manufacturer. Exterior Retractable Screens shall be installed and function as an integral component of the Sliding Aluminum-Framed Glass Doors
- D. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, the following manufacturers used as Basis of Design:
 - 1. Sliding Aluminum-Framed Glass Door System- Kawneer Company Inc.
 - 2. Exterior Retractable Screen – *similar to* Phantom Screens

2.03 Window Framing

- A. *Kawneer, Series AA 3200 Thermal Sliding Doors*
 1. 6-³/₄" frame depth, *with deep section to exterior*
 2. Interior glazed, 1 -inch Insulated-Glass Unit
 3. Thermal Break, with ¹/₄ - inch polyurethane separation

2.04 Exterior Retractable Screen

- A. Exterior Retractable, vertical side coiling screen, similar to Phantom Screens
 1. Aluminum casing, integrated with Sliding Aluminum-Framed Glass Door System, as shown on the drawings, to minimize visual impact.
 2. Aluminum to be clear, satin, anodized finish, to match door system framing.
 3. Screen Mesh with insect weave, with optimal viewing. Mesh Color to provide optimal view.
 4. Screen to have captured edge, mesh lock, with smooth operation.
 5. Provide, flush, finger pull on interior side of screen. No protruding pull. Exterior face of screen, leading edge frame, shall be blank, with no operating mechanism on exterior face.
 6. Positive latch mechanism to hold retractable screen, when in use.
 7. Spring gear to provide positive, constant, tension in use and full retraction when not in use.

2.05 Materials

- A. Framing System
 1. Alloy and temper Aluminum Extrusions as recommended by Sliding Aluminum-Framed Glass Door System Manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame.
 2. Finished components shall have a minimum of 50% mixed pre- and post-consumer recycled content.
 3. Thermal Barrier shall consist of two parallel glass fiber-reinforced nylon strips installed continuously and mechanically bonded to the aluminum.
 4. Aluminum extrusions shall have a clear, satin, anodized finish
 5. Fasteners shall be aluminum, or nonmagnetic stainless steel, and compatible with aluminum members, trim hardware, anchors, and other components.
 6. Anchors, Clips, and Accessories shall be aluminum, nonmagnetic stainless steel, or zinc-coated steel; sufficient to withstand locally, imposed pressures.
 7. Reinforcing Members shall be aluminum, or nonmagnetic stainless steel, sufficient to withstand locally, imposed pressures.
 8. Sealants required shall be permanently elastic, non-shrinking, and non-migrating type, as recommended by sealant manufacturer for joint size and movement.
 9. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
 - a. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.
- B. Hardware
 1. Mounting height to facilitate operation from interior only. Door sill to be located 3'-4" A.F.F.
 2. Provide stainless steel tandem rollers at sliding panels, in pairs, or as recommended by Manufacturer.
 3. Provide, flush, finger pull on interior side of operating panel. Exterior face of door frame shall be blank, with no operating mechanism on exterior face.
 4. Provide 2-point lock on interior of sliding door panel. No exterior access.

- C. Glazing Systems
 - 1. Insulated Glass Unit, as specified in Section 08 80 00.
 - 2. Glazing method shall be a dry type in accordance with manufacturer's standards. Exterior glazing shall be TPE gasket.

2.06 Performance, Storefront

- A. General
 - 1. Performance Class and Grade: AW-PG135-SD
 - 2. Sliding Aluminum-Framed Glass Doors shall comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).
- B. Structural
 - 1. Completed, installed Sliding Aluminum-Framed Glass Door System shall withstand positive and negative wind pressure loads normal to wall plane as required by the California Building Code, currently being enforced.
 - 2. A static air design load of 40 PSF (1915 Pa) shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member at design load. At structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing member in excess of 0.2% of the clear spans shall occur.
 - 3. When tested in accordance with AAMA 501.4, system must meet design displacement of 0.010 x the story height and ultimate displacement no greater than 2 -inches.
 - 4. Provide for thermal movement caused by 180 degrees, Fahrenheit, surface temperature, without buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.
- C. Thermal:
 - 1. Shall comply, with California, Building Code and California Green Code.
 - 2. Thermal Transmittance U Value: 0.41 BTU/HR/FT²/°F or less.
 - 3. Condensation Resistance Factor (CRF_g): A minimum of 69 (with a CRF_g of 68.)
- D. Maximum allowable air infiltration - 0.06 CFM/FT² at differential static pressure of 6.24 PSF
- E. No water leakage at minimum static air pressure differential of 10 PSF, CSA A440 B5 Rating.
- F. Acoustical:
 - 1. Sound Transmission Class (STC) shall not be less than 31 for 1" standard insulating unit
 - 2. Outdoor-Indoor Transmission Class (OITC) shall not be less than 25 for 1" standard insulating unit.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Contractor shall coordinate Sliding Aluminum-Framed Glass Door support sill dimensions with window framing dimensions prior to installation. Confirm with Shop Drawings.
- B. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Field Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.

- C. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of structural sill, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight sliding door installation.
 - 1. Masonry surfaces shall be visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Concrete surfaces shall be visibly dry, straight, flat, even, and smooth. Bearing surface shall be free of voids and approved for structural loading.
 - 3. Metal Surfaces shall be dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- D. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- E. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install in compliance with Shop Drawings, and manufacturer's written instructions.
- C. Install Sliding Aluminum-Framed Glass Doors, with Exterior Retractable Screen level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- D. Set sill members in bed of sealant or with gaskets, as instructed or recommended by Manufacturer, for weather tight construction.
- E. Install aluminum framed window system and components to drain condensation, water penetrating joints, and moisture migrating within system to the exterior.
- F. Provide positive separation between aluminum framing and ferrous materials to prevent corrosion, and galvanic or electrolytic action at points of contact.

3.03 Operation Adjustment

- A. Adjust fixed panels, sliding doors, hardware, weather stripping, and exterior screens to ensure alignment, smooth operation, and tight positive closure for weather protection, and security.
- B. Lubricate hardware and moving parts.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Aluminum Framed Entrances and Storefronts as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage
 - 2. ASTM E330 - Standard Test Method for Structural Performance
 - 3. ASTM E331 - Standard Test Method for Water Penetration
 - 4. ASTM E1425 - Standard Practice for Determining the Acoustical Performance
- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 507 -Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems
 - 2. AAMA 1503 -Test Method for Thermal Transmittance and Condensation Resistance
 - 3. AAMA 1801 -Specification for the Acoustical Rating of Glazed Wall Sections

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings including:
 - 1. Plans
 - 2. Elevations
 - 3. Sections
 - 4. Details
 - a. Coordinated curb/sill detail
 - b. Coordinated vertical mullion/structural column detail
 - 5. Hardware
 - 6. Attachments to other work
 - 7. Operational clearances
 - 8. Installation details
- C. Warranty

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of two (2) years, from the date of acceptance of the finished Building for occupancy, that the Aluminum Entrances and Storefronts will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of two (2) year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. This product has been incorporated into previous work on Site and, pending review and approval, shall be used as the standard for the work on this Phase of the Work.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original protective wrapping with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of two (2) years.
- B. Manufacturer shall replace Aluminum Entrances and Storefronts, or any components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. Procure Aluminum Entrances and Storefronts and associated components from a single manufacturer to provide standardization of appearance, maintenance and manufacturer's service.
- D. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Kawneer Company Inc.

2.03 Storefront

A. Kawneer, Trifab 601T

1. 2 -inch by 6 -inch framing, *with deep section to exterior*
2. Interior glazed, 1 -inch Insulated-Glass Unit
3. Thermal Break, with ¼ - inch polyurethane separation

2.04 Materials, Storefront

A. Framing System

1. Alloy and temper Aluminum Extrusions as recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame.
2. Finished components shall have a minimum of 50% mixed pre- and post-consumer recycled content.
3. Thermal Barrier shall consist of two parallel glass fiber-reinforced nylon strips installed continuously and mechanically bonded to the aluminum.
4. Aluminum extrusions shall have a clear, satin, anodized finish
5. Fasteners shall be aluminum, or nonmagnetic stainless steel, and compatible with aluminum members, trim hardware, anchors, and other components.
6. Anchors, Clips, and Accessories shall be aluminum, nonmagnetic stainless steel, or zinc-coated steel; sufficient to withstand locally, imposed pressures.
7. Reinforcing Members shall be aluminum, or nonmagnetic stainless steel, sufficient to withstand locally, imposed pressures.
8. Sealants required shall be permanently elastic, non-shrinking, and non-migrating type, as recommended by sealant manufacturer for joint size and movement.

B. Glazing System

1. As specified in Section 08 80 00 Glazing
2. Glazing Gaskets shall be Standard compression types; replaceable, extruded EPDM rubber
3. Spacers and Setting Blocks shall be Standard elastomeric type
4. Bond-Breaker Tape shall be standard TFE-fluorocarbon or polyethylene material to which sealants will not adhere.
5. Glazing Sealants shall be as recommended by manufacturer for joint type.

2.05 Performance, Storefront

A. Structural

1. Wind Loads:
Completed storefront system shall withstand positive and negative wind pressure loads normal to wall plane as required by the California Building Code, currently being enforced.
2. Seismic:
When tested in accordance with AAMA 501.4, system must meet design displacement of 0.010 x the story height and ultimate displacement no greater than 2 -inches.
3. Thermal Movement:
Provide for thermal movement caused by 180 degrees, Fahrenheit, surface temperature, without buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.

B. Thermal:

1. Shall comply, with California, Building Code and California Green Code.
2. Thermal Transmittance U Value: 0.41 BTU/HR/FT²/°F or less.
3. Condensation Resistance Factor (CRF_f): A minimum of 69 (with a CRF_g of 68.)

- C. Maximum allowable air infiltration - 0.06 CFM/FT² at differential static pressure of 6.24 PSF
- D. No water leakage at minimum static air pressure differential of 10 PSF, CSA A440 B5 Rating.
- E. Acoustical:
 - 1. Sound Transmission Class (STC) shall not be less than 31 for 1" standard insulating unit
 - 2. Outdoor-Indoor Transmission Class (OITC) shall not be less than 25 for 1" standard insulating unit

2.06 Entrances

- A. *Kawneer, 190, Narrow Stile*
 - 1. Thickness, 1-³/₄ -inch
 - 2. Vertical Stile, 2-¹/₈ -inch
 - 3. Top Rail, 2-¹/₄ -inch
 - 4. Bottom Rail, 10 -inch

2.07 Materials, Entrances

- A. Framing System
 - 1. Alloy and temper Aluminum Extrusions as recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame.
 - 2. Finished components shall have a minimum of 50% mixed pre- and post-consumer recycled content.
 - 3. Thermal Barrier shall consist of two parallel glass fiber-reinforced nylon strips installed continuously and mechanically bonded to the aluminum.
 - 4. Aluminum extrusions shall have a clear, satin, anodized finish
 - 5. Fasteners shall be aluminum, or nonmagnetic stainless steel, and compatible with aluminum members, trim hardware, anchors, and other components.
 - 6. Anchors, Clips, and Accessories shall be aluminum, nonmagnetic stainless steel, or zinc-coated steel; sufficient to withstand locally, imposed pressures.
 - 7. Reinforcing Members shall be aluminum, or nonmagnetic stainless steel, sufficient to withstand locally, imposed pressures.
 - 8. Sealants required shall be permanently elastic, non-shrinking, and non-migrating type, as recommended by sealant manufacturer for joint size and movement.
- B. Glazing Systems
 - 1. Glazing, as specified in Section 08 80 00.
 - 2. Glazing Gaskets shall be standard compression types; replaceable, extruded EPDM rubber.
 - 3. Spacers and Setting Blocks shall be standard elastomeric type

2.08 Performance, Entrances

- A. Entrance shall be compatible with Storefront, within which it is located.
- B. Entrance shall not compromise the overall performance of the completed system.

2.09 Hardware

- A. Hardware by Manufacturer
 - 1. Emergency egress/ panic devices not required
 - 2. Keypad access as recommended by Manufacturer, or as indicated below
 - 3. Integral closer

- B. Single Acting, Top and bottom offset pivots
- C. Keypad Lock:
 - 1. *Trilogy DL 1200, or as recommended by Manufacturer*
 - a. Dimensions: 14 $\frac{3}{8}$ -inches (H) x 1 $\frac{5}{8}$ -inches (D) x 1 $\frac{3}{4}$ (W)
 - b. Lever handle
 - c. Key Override, Schlage SC1 or Key to Master
 - d. Clear, satin, anodized finish
- D. Deadlatch
 - 1. *Adams Rite 4900*
 - a. Dimensions: $\frac{7}{8}$ -inches (W) x 5 $\frac{13}{16}$ -inches (H)
 - b. Use standard 1 $\frac{5}{32}$ -inch mortise cylinder with MS cam
 - c. Use, accessible code, compliant lever
 - d. Clear anodized finish – faceplate and lever

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Contractor shall coordinate concrete sill curb dimensions prior to installation with Storefront dimensions and confirm with Shop Drawings.
- B. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- C. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- D. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Aluminum Entrances and Storefronts in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Aluminum Windows as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage
 - 2. ASTM E330 - Standard Test Method for Structural Performance
 - 3. ASTM E331 - Standard Test Method for Water Penetration
 - 4. ASTM E1425 - Standard Practice for Determining the Acoustical Performance
- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 507 -Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems
 - 2. AAMA 1503 -Test Method for Thermal Transmittance and Condensation Resistance

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings
- C. Warranty

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of two (2) years, from the date of acceptance of the finished Building for occupancy, that the Aluminum Windows will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of two (2) year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original protective wrapping with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of two (2) years.
- B. Manufacturer shall replace Aluminum Windows, or any components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's, or Product, name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. Procure Aluminum Windows and associated components from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- D. Materials shall comply with this Section and any applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Kawneer Company Inc.

2.03 Window Framing

- A. *Kawneer, Series AA 6600 Windows- Fixed.*
 - 1. 2 -inch by 6 -inch framing, *with deep section to exterior*
 - 2. Interior glazed, 1 -inch Insulated-Glass Unit
 - 3. Thermal Break, with ¼ - inch polyurethane separation
 - 4. Similar and compatible with Storefront framing.

2.04 Materials

A. Framing System

1. Alloy and temper Aluminum Extrusions as recommended by Aluminum Window manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame.
2. Finished components shall have a minimum of 50% mixed pre- and post-consumer recycled content.
3. Thermal Barrier shall consist of two parallel glass fiber-reinforced nylon strips installed continuously and mechanically bonded to the aluminum.
4. Aluminum extrusions shall have a clear, satin, anodized finish
5. Fasteners shall be aluminum, or nonmagnetic stainless steel, and compatible with aluminum members, trim hardware, anchors, and other components.
6. Anchors, Clips, and Accessories shall be aluminum, nonmagnetic stainless steel, or zinc-coated steel; sufficient to withstand locally, imposed pressures.
7. Reinforcing Members shall be aluminum, or nonmagnetic stainless steel, sufficient to withstand locally, imposed pressures.
8. Sealants required shall be permanently elastic, non-shrinking, and non-migrating type, as recommended by sealant manufacturer for joint size and movement.

B. Glazing Systems

1. Glazing, as specified in Section 08 80 00.
2. Glazing method shall be a dry type in accordance with manufacturer's standards. Exterior glazing shall be TPE gasket.

2.05 Performance, Storefront

A. Structural

1. Completed, installed windows shall withstand positive and negative wind pressure loads normal to wall plane as required by the California Building Code, currently being enforced.
2. When tested in accordance with AAMA 501.4, system must meet design displacement of 0.010 x the story height and ultimate displacement no greater than 2 -inches.
3. Provide for thermal movement caused by 180 degrees, Fahrenheit, surface temperature, without buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.

B. Thermal:

1. Comply, with California, Building Code and California Green Code.
2. Thermal Transmittance U Value: 0.41 BTU/HR/FT²/°F or less.
3. Condensation Resistance Factor (CRF_f): A minimum of 69 (with a CRF_g of 68.)

C. Maximum allowable air infiltration - 0.06 CFM/FT² at differential static pressure of 6.24 PSF

D. No water leakage at minimum static air pressure differential of 10 PSF, CSA A440 B5 Rating.

E. Acoustical:

1. Sound Transmission Class (STC) shall not be less than 31 for 1" standard insulating unit
2. Outdoor-Indoor Transmission Class (OITC) shall not be less than 25 for 1" standard insulating unit.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Contractor shall coordinate windowsill dimensions with window framing dimensions prior to installation. Confirm with Shop Drawings.
- B. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- C. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- D. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install in compliance with Shop Drawings, and manufacturer's written instructions.
- C. Install window framing system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- D. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.
- E. Install aluminum framed window system and components to drain condensation, water penetrating joints, and moisture migrating within system to the exterior.
- F. Separate aluminum from dissimilar materials to prevent corrosion or electrolytic action at points of contact.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Tubular Skylights as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA/WDMA/CSA 101/I.S.2/A440 - Standard/Specification for Windows, Doors, and Unit Skylights; 2011.
- B. ASTM International (ASTM):
 - 1. ASTM D1929 - Test Method for Ignition Properties of Plastics.
 - 2. ASTM D2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.
 - 3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 4. ASTM E547 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain walls by Cyclic Air Pressure Difference.
- C. Factory Mutual (FM):
 - 1. FM Standard 4431 - The Approval Standard for Skylights.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings:
 - 1. Dimensioned layout and details of roof dome assembly, flashing base, reflective tubes, diffuser assembly, and accessories.
 - 2. Installation requirements, including rough opening and framing dimensions, anchorage, roof flashings and accessories.

1.05 Quality Assurance

- A. Manufacturer Qualifications: All primary products specified in this section shall be supplied by a single manufacturer with a minimum of twenty-years experience in the industry.

- B. Installer Qualifications: All products shall be installed by a single installer with a minimum of five-years of demonstrated experience, with adequate equipment, skilled workers, and practical experience to meet the project schedule.
- C. Skylights shall conform with authorities having jurisdiction and be designed to meet design criteria of the project location and the following:
 - 1. Skylights must be certified by NFRC.
 - 2. Skylights must be Tested and labeled in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
 - 3. Skylights must have Factory Mutual (FM) Approval Class Number 4431.
 - 4. Meet or exceed OSHA 200 pound (90 kg) Drop Tests expressed in 29 CFR 1910.23(e)(8)

1.06 Delivery, Storage, and Handling

- A. Deliver Tubular Skylights to Project Site in original protective wrapping and packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, type, and local Contact information.
- B. Handle and protect Tubular Skylights from physical damage. Store materials in their original undamaged packaging in a clean, protected location.
- C. Any Skylights, or components, which are damaged or have defects shall be removed, legally disposed of, and replaced at no expense to the District. Including components damaged during construction.

1.07 Warranty

- A. Manufacturer's standard ten (10) year warranty.
- B. Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.
- C. Manufacturer shall replace Tubular Skylight components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- D. Manufacturer's warranty shall commence on date of written acceptance of completed installation.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Solatube International, Inc.

2.03 Tubular Daylighting Devices

- A. Solatube Model 290 DS: 14-inch Daylighting System, for suspended and hard ceilings.
1. Roof Dome: Type DA, 0.125-inch minimum thickness, impact resistant injection molded acrylic classified as CC2 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A), impact modified acrylic blend.
Including Tube Ring and Dome Seal, per Manufacturer's recommendation.
 2. Roof Curb: CXX Metal Insulated Curb with custom curb height as determined by the Installer.
 3. Reflective Tubes: Per 2.03.C.with Trim Ring for both Suspended and Hard Ceilings.
Provide wire Suspension Kit, as required.
 4. Diffuser Assembly: Square Diffuser Assembly with LN (Natural) lens.
- B. Solatube Model 330 DS-O: 21-inch Daylighting System, no ceiling/ open to structure
1. Roof Dome: Type DP, 0.115-inch minimum thickness, polycarbonate classified as CC2.
 2. Roof Curb: FC, 27 inch x 27 inch ID, Curb Cap Insulation: CCI
CXX Metal Insulated Curb with custom curb height as determined by the Installer.
 3. Reflective Tubes: Per 2.03.C.with Type 'R,' Open Ceiling Trim Ring
Provide wire Suspension Kit, as required.
 3. Diffuser Assembly : Round Diffuser Assembly with L6 (Superwide Optiview Micro-replicated) lens.
- C. Reflective Tubes:
1. Reflective Extension Tube: Type EXX
 2. Interior Finish: Spectralight Infinity with INFRAREDuction Technology combining ultra-high Visible Light reflectance with Ultra-low Infrared (IR) reflectance.
- D. Accessories:
1. Fasteners: non- magnetic, non-corrosive, per Manufacturer's recommendations.
 2. Suspension Wire: annealed, galvanized steel. Sized per Manufacturer's direction.
 - 3 Sealant: Polyurethane or copolymer as recommended by Manufacturer.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.

- C. prior to commencing installation.
- D. Do not commence installation until all wet work, such as concrete and painting, has been completed and thoroughly dried, unless expressly permitted by manufacturer's in writing
- E. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Acoustical Tile Ceiling in accordance with manufacturer's written instructions and ASTM 636 per accepted industry standards.
- C. Installation shall conform, in as much as possible, to the configuration on the Drawings.

3.03 Installation

- A. Install in accordance with manufacturer's printed instructions.
- B. Coordinate installation with substrates, air and vapor retarders, roof insulation, roofing membrane, and flashing to ensure that each element performs as intended and that the finished installation is weather tight.

1. Install flashing to produce weatherproof seal with curb and overlap with roofing system termination at top of curb.
2. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.
3. Coordinate attachment and seal of perimeter air and vapor barrier material.

Where metal surfaces of tubular unit skylights will contact incompatible metal or corrosive substrates, including preservative-treated wood, provide permanent separation as recommended by manufacturer

Align device free of warp or twist, maintain dimensional tolerances.

Inspect installation to verify secure and proper mounting. Test each fixture to verify operation, control functions, and performance. Correct deficiencies.

- C. This product has been incorporated into previous work on Site and, pending review and approval, shall be used as the standard for the work on this Phase of the Work.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Replace damaged, or soiled, panels or components at no added cost.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials and incidentals required, and install Hardware as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International
- B. American National Standards Institute (ANSI)
- C. Builders Hardware Manufacturers Association (BHMA)
- D. Door and Hardware Institute (DHI)
- E. National Builders Hardware Association (NBHA)
- F. Steel Door Institute (SDI)

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Hardware schedule, of sets to be installed, developed by a, DHI Certified, Door + Hardware Specification Consultant (DHSC)
- C. Sample of exposed metal finishes for selection

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Hardware will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee installation, for a period of one year, from the date of acceptance of the Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver section elements to Project Site in original containers with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store materials in their original undamaged containers in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Hardware that fails due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Manufacturers shall only include companies with a minimum of five (5) years documented experience, in manufacturing hardware systems and components.
- B. Subject to compliance with accessibility requirements, provide products from the following manufacturer, or equal:
 - 1. Hinges
 - a. Hager
 - b. McKinney
 - c. Monroe
 - 2. Keypad Lock
 - a. Alarm Lock (*Annunciate on SCADA system*)
 - b. Passage Capabilities
 - 3. Cylindrical Locksets, Privacy
 - a. Corbin Russwin
 - b. Schlage
 - c. Stanley

4. Closers
 - a. Corbin-Russwin
 - b. Glynn-Johnson
 - c. Von Duprin
5. Weatherstripping, Door Sweeps
 - a. Pemko
6. Threshold
 - a. Pemko- 229A
 - b. Schluter Systems – *Reno-U*
Internal Threshold, Edge Protection/ Profile, Tiling 09 30 00
7. Door (Floor) Stop
 - a. Rockwood,
 - i. Door Stop – Rockwood, RM857
8. Levers - *similar to AHI, SIG124-204*

2.03 Keying

- A. Keyways in lockable devices shall be compatible with, and masterkeyed into, Owner's standard.
- B. Provide two (2) keys with each lock, permanently inscribed "Do Not Duplicate." Submit to District in clearly labeled envelopes, designating lock location. Keys to have individual identification tags on rings.
- C. Devices shall comply with performance requirements for Grade 1, as listed in ANSI/BHMA A156.5, and shall be tested for pick and drill resistance.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean, and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Hardware in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

3.04 Schedule

A. Schedule is included as a guide in establishing the quality, type and function of hardware required and is not to be construed as all inclusive. Hardware schedule, of sets to be installed, shall be developed by a, DHI Certified, Door + Hardware Specification Consultant (DHSC) and submitted to the Architect for review.

HARDWARE SETS

HDW 1 Entrances:
Lobby 100A, Board Room 112A, Board Room 112 B, Corridor 113B
by Entrance Manufacturer, (Aluminum-Framed Entrances and Storefronts - 08 41 13)
Threshold: Pemko 229A
Door Stop Rockwood RM857

HDW 2 File Storage: 111A

1 ½	PR	Hinges	4½ -inches with NRP
1		Keypad Lock	Trilogy T2 DL2700WP
1		Strike	ASA
1		Closer	
1		Door Sweep	Pemko, 321SSN
1		Threshold	Pemko, 229A
1		Door Stop	Rockwood RM857
		Weather Stripping	Rockwood
		Silencers	Rockwood 608 RKW

HDW 3 Corridor: 113A

1 ½	PR	Hinges	4½ -inches with NRP
1		Keypad Lock	Trilogy T2 DL2700WP
1		Strike	ASA
1		Closer	
1		Door Stop	Rockwood, RM857
		Silencers	Rockwood 608 RKW

HDW 4 Vault 103A, Tele/Elec 105A, Server 106A, Utility 108A

1 ½	PR	Hinges	4½ -inches with NRP
1		Keypad Lock	Trilogy T2 DL2700WP
1		Strike	ASA
1		Closer	
1		Internal Threshold	Schluter Systems
		Edge Protection	<i>Reno U</i>
1		Door Stop	Rockwood RM857
		Silencers	Rockwood 608 RKW

<u>HDW 5</u>		Office 102A, Office 104A, Board Room 112C
1 ½ PR	Hinges	4½ -inches with NRP
1	Keypad Lock	Trilogy T2 DL2700WP Passage capabilities
1	Strike	ASA
1	Closer	
1	Internal Threshold Edge Protection	Schluter Systems <i>Reno U</i>
1	Door Stop Silencers	Rockwood RM857 Rockwood 608 RKW

<u>HDW 6</u>		Toilet 109 A, Toilet 110 A
1 ½ PR	Hinges	4½ -inches with NRP
1	Cylindrical	Privacy
1	Strike	ASA
1	Closer	
1	Door Stop Silencers	Rockwood RM857 Rockwood 608 RKW

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Glazing as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
- B. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance
 - 2. ASTM E2649 – Standard Test for Argon Concentration in Sealed Insulating Glass Units
- C. Glass Association of North America (GANA):
 - 1. GANA Glazing Manual
 - 2. GANA Engineering Standards Manual
 - 3. GANA Laminated Glazing Reference Manual
- D. Insulating Glass Certification Council (IGCC):
- E. Insulating Glass Manufacturers Alliance (IGMA):

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Sample:
 - Representative sample of each glazing material specified, Two (2) - 8 -inch by 8 -inch square.
- C. Certified Insulating Glass Unit testing results from authorized Testing Lab.

1.05 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Glazing will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately. Guarantee shall include cost for, follow up, random testing of IGUs, by an Independent Testing Lab, for integrity of Argon filled IGUs, just prior to the expiration date of the guarantee.

- B. Insulated Glass Units (IGU) that have been filled with Argon and are deemed complete by the Fabricator, shall be randomly selected for testing, by an Independent Testing Lab.
 - 1. Testing lab shall provide a Certified copy of the test results for each, individual, IGU tested.
- C. Insulated Glass Units shall be certified by the Insulating Glass Certification Council
- D. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Safety Compliance

- A. Tempered Glass at Doors:
 - 1. Glazing in doors shall be tempered.
 - 2. Glazing, within a 24-inch arc of the vertical edge of the door in a closed position and where the bottom exposed glazing edge is less than 60 inches above the immediately adjacent walking surface, shall be tempered.
- B. Tempered Glass at Windows and Storefronts:
 - 1. Glazing shall be tempered where the exposed area of an individual pane is greater than nine (9) Square Feet.
 - 2. Glazing shall be tempered where the exposed glazing edge is less than eighteen (18) inches above the immediately adjacent walking surface.

1.07 Delivery, Storage, and Handling

- A. Deliver Glazing to Project Site in original protective wrapping with seals unbroken. Packaging shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Glazing from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any Glazing materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.08 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Glazing that fails due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
1. Cardinal Glass Industries
 2. Pilkington-NSG Group
 3. Vitro Architectural Glass
 4. Viracon, Inc.

2.03 Materials

- A. Insulated-Glass Unit:
1. 1 -inch overall thickness
 2. 2 - $\frac{1}{4}$ -inch lites, clear, float glazing (*tempered where required by Code*)
 3. $\frac{1}{2}$ -inch double sealed, Argon filled, space between glass lites
 4. Aluminum spacer between lites with folded and permanently joined corners to provide continuity around perimeter of each unit. Primary seal shall completely cover sides and corners of spacers between spacers and glass, on both sides.
 5. Low-E coating on surface 2 and surface 4 of Insulating-Glass Unit
- B. Glazing Sealant shall be Tremco Mono, Pecora GC-9 Polysulfide, Dap Inc., Flexiseal or equal; 999A Glazing Silicone by Dow; Silalaze II by General Electric or equal; or equivalent 100 percent solids system recommended for glazing to the surrounding frame material or coating.
- C. Glazing Tape shall be Tremco No. 440, Pecora Extru-seal Butyl Rubber Tape, Dap Inc. Butyl Rubber Sealing Tape or equal. Tape shall be by the same manufacturer as the glazing compound.
- D. Setting blocks shall be neoprene, EPDM, or Silicone with a 80-90 durometer hardness and with a minimum length of 0.1-inch per SF of glass, minimum length of 4-inches.
- E. Spacing blocks shall be similar to setting blocks except with a 50 shore A durometer.
- F. Glazing strips for non-labeled door and bead glazing, shall be adhesive faced closed cell PVC foam strip, 1/8-inch thick, 32 durometer hardness.

2.04 Performance

- A. Systems shall be capable of withstanding normal thermal movements, wind loads and impact loads, without failure.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions that must be corrected prior to commencing installation.

C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

B. Install Glazing in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Protection and Cleaning:

A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials and incidentals required, and install translucent polycarbonate resin, accent, panels as shown on the drawings and as specified herein.
- B. Will require coordination with other components to confirm structural support and installation.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data Sheets
- B. Shop Drawings showing:
 - 1. Layout/ Configuration
 - 2. Critical dimensions
 - 3. Anchorage and/or structural support
 - 4. Method of separation of dissimilar metals
- C. Samples
 - 1. Two (2) – 4-inch by 4-inch samples in prescribed color and finish
 - 2. Contractor is encouraged to submit preliminary color and finish samples for approval, prior to development of final, finished, samples.
 - 3. *Final samples will be used to evaluate full size panels, for acceptability, at installation.*
- D. Maintenance Data/ Recommendations

1.04 Quality Measures

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the polycarbonate resin panels will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver polycarbonate resin accent panels to Project Site in protective wrapping labeled with manufacturer's name, product brand name and local contact information.

- B. Polycarbonate resin panels shall be protected from physical damage during transport and prior to installation. Store panels flat, protected from the elements, in a clean, enclosed, location.
- C. Panels which are damaged prior to, or during, installation or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace polycarbonate resin panels that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner. Include cost of removal and replacement of adjacent materials and cost to replace these materials, should they be damaged during rework of the polycarbonate panels.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for minimum of one (1) year, from that date, or longer, if provided for by Manufacturer's warranty.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality, performance criteria and aesthetic desired.
- B. The nature of this product and aesthetic was reviewed and approved by the Architectural Board of Review of the Agency having Jurisdiction. The material specified forms the basis of design. Alternative materials will be considered as stipulated in the General Conditions.
- C. This product has been incorporated into previous work on Site and, pending review and approval, shall be used as the standard for the work on this Phase of the Work.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. 3form

2.03 Materials

- A. *Koda XT*, by 3form - translucent, enhanced UV-resistant polycarbonate resin panels for exterior use.
- B. 1" thick by 12" wide panels, in 7'-2" and 10'-0" lengths, predrilled for structural support.
- C. Panels shall have machined, straight and square, hard edges and corners. Panels shall have an even translucent brushed (Vellum F04) finish on all surfaces. Slight, surface, texture shall preclude surface marks, yet not be capable of retaining significant amounts of dust or surface dirt.
- D. No distortion, twisting, or warping on flat (face surface) axis. No scallop, or waves on edges.
- E. UV-resistant polycarbonate resin panels shall have a custom color similar to 3form, O12 Persimmon. Custom color described by 3form as OHx2+RL+Thunder. Color shall be uniform and appear to be cast-in.

- F. Structural support provided by others. Define and describe required support, including recommended fasteners, standoffs, and gaskets, in addition to critical installation criteria.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Responsibility for design of the structural support for the Polycarbonate Resin Panels shall be shared, and coordinated, with the manufacturer of the Shade Grilles, as specified in Section 05 50 00, Metal Fabrications.
 - 1. Prior to submittal of Shop Drawings; coordinate with manufacturer, supplier, and/or the installer of the Shade Grilles, specified in Section 05 50 00.
 - 2. Establish requirements for structural support by nelson studs off the vertical HSS structural support columns. Separation of elements provided by standoffs, specified in Section 05 50 00.
 - 3. Provide necessary information to design Structural Engineer, for sizing and location of nelson studs on the HSS vertical support columns. This shall be coordinated with the opening locations and spacing required for structural support of the Shade (Egg Crate) Grilles.
 - 4. Review and confirm design when complete.

3.02 Fabrication

- A. Contractor shall assume all risk, including cost, if fabrication commences prior to review of final sample, by Architect.
- B. Due to close proximity of panels in the final installation; distinct variations in color, transparency, finish, texture, or size between panels will not be acceptable.
- C. Panel manufacturer shall cast-in, or drill, the openings for the structural support elements at each panel, for accuracy and to preclude inadvertent damage to the panels.

3.03 Installation, General

- A. Panels to be installed on either side of vertical support structure as shown on the Drawings. Panels to be supported by nelson studs with aluminum offsets, specified in Section 05 50 00 Metal Fabrications.
- B. Prior to installation of the polycarbonate resin panels, examine work site conditions, and adjacent surfaces.
 - 1. Confirm that the panels arrived, on Site, undamaged. Contractor shall immediately remove and replace any damaged panels.
 - 2. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 3. Verify that locations, elevations, and dimensions are as indicated on the drawings.
 - 4. Verify that the structural support elements align with the openings in the Panels.
 - 5. Confirm that the structure, adjacent materials, products, and finishes are ready for installation of the Cast Resin Panels.
- C. Notify the General Contractor, and Architect, of specific conditions found that need to be corrected prior to commencing installation.
- D. Do not begin installation until unsatisfactory conditions have been rectified.
- E. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials and incidentals required, and install Gypsum Board Assemblies as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI)
 - 1. ANSI A108.11 - Interior Installation of Cementitious Backer Units
- B. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM C11 - Standard Terminology Relating to Gypsum Building Materials and Systems
 - 2. ASTM C475 - Standard for Joint Compound and Tape for Finishing Gypsum Board
 - 3. ASTM C645 - Standard for Nonstructural Steel Framing Members
 - 4. ASTM C754 - Standard for Installation of Steel Framing Members
 - 5. ASTM C840 - Standard for Application and Finishing of Gypsum Board
 - 6. ASTM C1396 - Standard for Gypsum Wallboard
- C. Gypsum Association (GA):
 - 1. GA-201, Gypsum Board for Walls and Ceilings
 - 2. GA-214, Recommended Levels of Finish for Gypsum Board
 - 3. GA-216, Application and Finishing of Gypsum Panel Products
 - 4. GA-505, Gypsum Board Terminology

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Gypsum Board Assemblies will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Gypsum Board Assemblies to Project Site in original protective wrapping with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Gypsum Board Assemblies from physical damage. Store materials in their original undamaged containers in a clean, protected location.
- C. Any products or materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the Contractor's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Gypsum Board Assemblies that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufactures or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. USG Corporation
 - 2. National Gypsum
 - 3. CertainTeed

2.03 Metal Framing and Furring

- A. Studs and Runners:
 - 1. "C" shaped framing in compliance with ASTM C645
 - a. Gauge as recommended by metal framing manufacturer
 - b. Width and depth as indicated on drawings
 - c. G40 hot-dipped galvanized coating
- B. Furring Channels:
 - 1. $\frac{7}{8}$ -inch channels, in compliance with ASTM A525
 - a. Gauge as recommended by metal framing manufacturer
 - b. Shape as detailed or indicated on drawings
 - c. G40 hot-dipped galvanized coating

2.04 Ceiling and Soffit Framing System

- A. Main Runners:
 - 1. Cold-rolled, "C" shaped steel channels, 16-gauge minimum.
 - a. G40 hot-dip galvanized coating per ASTM A525

- B. Cross furring:
 - 1. $\frac{7}{8}$ -inch channels, 25-gauge, galvanized per ASTM A525
- C. Furring anchorages:
 - 1. 16-gauge galvanized wire ties, manufacturer's standard wire-type clips, bolts, nails or screws recommended by furring manufacturer and complying with ASTM C754.
- D. Hanger Anchorage Devices:
 - 1. Screws, clips, bolts or other devices compatible with indicated structural anchorage for ceiling hangers and whose suitability has been proven through standard construction practices or by certified test data.
- E. Hangers:
 - 1. Steel wire or rods, sizes to comply with requirements of ASTM C754 for ceiling or soffit area and loads to be supported.
 - 2. Soft, Class 1 galvanized wire
 - 3. Rods and flats:
 - a. Mild steel components

2.05 Accessories

- A. Metal Trim for Gypsum Board:
 - 1. Conform to profile and dimensions indicated
 - 2. Galvanized steel, 26-gauge minimum
 - 3. Corner beads
 - 4. Casing beads
- B. Paper-Faced Metal Trim for Gypsum Board:
 - 1. Conform to profile and dimensions indicated
- C. Backer Plates:
 - 1. Steel, galvanized; 6 inches wide x 20- gauge minimum x lengths to suit size of items to be attached; fastened to studs for attachment of surface mounted fittings and accessories.
 - 2. Elimination of backer plates or direct attachment of accessories or equipment to studs will not be allowed.
- D. Adhesives and Joint Treatment Materials:
 - 1. As recommended by Manufacturer

2.06 Board Materials

- A. Gypsum Wallboard:
 - 1. $\frac{5}{8}$ -inch regular, with tapered edges, ASTM C1396
- B. Moisture Resistant Gypsum Wallboard:
 - 1. In areas and spaces with potential moisture
- C. Exterior Soffit Board
- D. Cement Backer Board:
 - 1. $\frac{5}{8}$ -inch thick aggregated Portland cement board with woven glass fiber mesh facing

2.07 Performance

- A. Allowable Tolerances - 1/16-in maximum offsets between planes of board faces and 1/8-in in 8-ft for plumb, level, warp and bow.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Gypsum Board Assemblies in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Installation, Specific Criteria

- A. Environmental Conditions:
 - 1. Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C840 and with gypsum board manufacturer's recommendations.
 - 2. Maintain minimum room temperatures, not less than 40 degrees F, for application of non-adhesive for attachment of gypsum board to framing. For adhesive attachment and finishing of gypsum board maintain not less than 50 degrees F for 48 hours prior to application and continuously thereafter until drying is complete.
 - 3. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.
- B. Finish gypsum work in accordance with the referenced standard and to Level 5 of Gypsum Association GA-214.

3.04 Protection and Cleaning

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials and incidentals required, and install Tile as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
 - 1. ANSI A108-A118-A136.1, Specifications for the Installation of Ceramic Tile
 - 2. ANSI A137 – Ceramic Tile Specifications
- B. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM C373 -Standard for Determination of Water Absorption for Ceramic Tiles
 - 2. ASTM C1027 - Standard for Determining Visible Abrasion Resistance of Glazed Ceramic Tile
- C. Ceramic Tile Institute of America Inc. (CTIOA):
- D. Tile Council of North America (TCNA):
 - 1. TCNA - 2017 Handbook for Ceramic Tile Installation

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Samples:
 - 1. Provide physical samples of the range of standard tile, colors and textures, of the tile series of the Tile Manufacturer that complies with the requirements of the specifications.
 - 2. Provide physical samples of the range of grout colors of the Grout Manufacturer that complies with the requirements of the specifications.
 - 3. Physical samples required. Color charts will not be accepted.
 - 4. Once the Manufacturer is deemed acceptable and specific colors and textures are selected; Contractor shall submit two (2) sample boards, exhibiting each tile and grout type mounted to show the intersection of tiles and grout specified and selected. Hard backed sample board shall be 12 -inches square.
 - 5. Submittals shall be timed to provide for sufficient review time and not delay the schedule

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Tile will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Tile and setting materials to Project Site in original protective packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Tile from physical damage. Store materials in their original undamaged containers on an elevated platform, under cover, in a clean, dry, and protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at no cost to the Owner.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Tile that fails due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of aesthetic, quality, and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers (*Basis of Design*)

- A. Subject to compliance with requirements, provide Tile from the following manufacturer, or equal:
 - 1. Emser Tile
 - 2. Bedrosians

2.03 Floor Field Tile

- A. *Emser Tile – Esplanade*
 - 1. Glazed Porcelain
 - 2. Field Tile Size: 12 -inches by 24 -inches, by $\frac{3}{8}$ -inches thick
 - 3. Grout Joint: $\frac{3}{16}$ -inch
 - 4. Finish: Matte
 - 5. Color: (*Esplanade*) *Hall*

2.04 Wall Base Bullnose

- A. *Emser Tile – Esplanade - Surface Bullnose (SBN)*
 - 1. Glazed Porcelain.
 - 2. Tile Size: 3 -inches by 12 -inches, by $\frac{3}{8}$ -inches thick
 - 3. Grout Joint: $\frac{3}{16}$ -inch
 - 4. Finish: Matte
 - 5. Color: (*Esplanade*) *Hall*

- B. Wall Base below Storefront
 - 1. Greater than 3-inches. Will require cutting of floor tile to achieve required height.
 - 2. Grout Joint: $\frac{3}{16}$ -inch
 - 3. Finish: Matte
 - 4. Color: (*Esplanade*) *Hall*

2.05 Wainscot Tile

- A. *Bedrosians- Sahara (Field)*
 - 1. Matte Porcelain
 - 2. Field Tile Size: 3 -inches by 12 -inches, by $\frac{3}{8}$ -inches thick
 - 3. Grout Joint: $\frac{3}{16}$ -inch
 - 4. Finish: Matte
 - 5. Color 1: (*Sahara*) *White*
 - 6. Color 2: (*Sahara*) *Grey*

2.06 Wainscot Bullnose

- A. *Bedrosians- Sahara (Bullnose)*
 - 1. Matte Porcelain
 - 2. Tile Size: 3 -inches by 24 -inches, by $\frac{3}{8}$ -inches thick
 - 3. Grout Joint: $\frac{3}{16}$ -inch
 - 4. Finish: Matte
 - 5. Color: (*TBD*)

2.07 Tile Setting Materials

- A. Large and Heavy Tile (LHT) Mortar:
 - 1. Manufacturer
 - a. Sika
 - b. Ardex
 - c. Mapei
 - 2. Per TCNA - 2017 Handbook for Ceramic Tile Installation, as applicable

- B. Patching and Leveling Compound:
 - 1. Manufacturer
 - a. Sika
 - b. Ardex
 - c. Mapei

- C. Grout:
 - 1. Fine sanded grout
 - 2. Manufacturer
 - a. Sika
 - b. Ardex
 - c. Mapei
 - 3. Color: Potentially up to three (3) grout colors to be selected and used.
Color(s) to be selected from Manufacturer's full range of standard grout colors.

2.08 Threshold, Exterior Doors

- A. Assa Abloy, *Pemko- 229A*, Commercial Saddle Threshold
- B. 5" x 1/2", Mill Finish Aluminum
- C. ADA compliant

2.09 Threshold, Internal Doors

- A. Edge Protection and Transition Profile
- B. Schluter Systems – *Reno-U*
 - 1. 1/2-inch vertical leading edge
 - 2. Material: Anodized Aluminum
 - 3. Finish: AT-Satin Nickel Anodized Aluminum
 - 4. ADA compliant

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.
- D. Preparation:
 - 1. Protect surrounding work from damage.
 - 2. Remove any curing compounds or other contaminants.
 - 3. Vacuum clean surfaces and damp clean.
 - 4. Seal substrate surface cracks with filler. Level substrate surfaces to acceptable flatness tolerances.
 - 5. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
 - 6. Prepare substrate surfaces for installation in accordance with TCNA Standards, and Manufacturer's recommendations and instructions.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Tile in accordance with Manufacturer's written instructions and per accepted industry standards as described in the TCA Handbook for Ceramic Tile Installation, for Large Format Tile installations.

- C. Tile Installation:
 - 1. Medium Bed installation, per Manufacturer's written instruction or recommendations
 - 2. Comply with ANSI A108.2 as applicable to the installation methods
 - 3. Comply with TCNA - 2017 Handbook for Ceramic Tile Installation, as applicable
- D. Floor Tile Layout
 - 1. Running Bond with $\frac{1}{3}$ offset.
 - 2. Floor tile to be placed tight to perimeter wall
 - 2. Align field tile and wall base tile, grout joints, in both directions
- E. Bullnose Wall Base
 - 1. Floor tile to be placed tight to perimeter wall
 - 2. Wall base tile to overlap floor tile
 - 3. Horizontal Grout joint below wall base and above floor tile
 - 4. Vertical grout joints at Wall Base to align, in both directions, with Floor Field Tile grout joints.
- F. Wainscot Tile
 - 1. Running Bond
 - 2. Bullnose Tile, Top of Wainscot, shall be at 54" \pm
 - 3. Wainscot shall consist of 16 lines of horizontal Wainscot Field Tile
 - 4. Wainscot lines shall alternate in color (in two course groups, as shown)
- G. Backsplash
 - 1. Full width of countertop, corner-to-corner, bottom of wall cabinets to top of countertop.
 - 2. Wainscot Tile, Running Bond
 - 3. Wainscot lines shall alternate in color (in two course groups) every other course of tile.
- H. Accent Tile Wall
 - 1. Accent Tile at water cooler, between doors jambs, from top of Floor, to top of Door Frames.
 - 2. Wainscot Tile set vertically (as shown), center between door jambs.
 - 3. Wainscot lines shall alternate in color (as shown)

3.03 Protection and Cleaning:

- A. Protect Floor Tile installation from foot traffic until mortar and grout are fully set and cured, as defined by the Manufacturer.
- B. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection.
- C. Repair, or replace damaged Tile, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Acoustical Tile Ceilings as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
 - 1. ASTM C635 - Specification for Metal Suspension Systems for Acoustical Tile Ceilings
 - 2. ASTM C636 - Recommended Installation of Ceiling Suspension Systems for Acoustical Tile
 - 3. ASTM E580 - Installation of Ceiling Suspension Systems in Areas Subject to Earthquake
 - 4. ASTM E1264- Classification for Acoustical Ceiling Products.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings:
 - 1. Dimensioned layout and details of acoustical ceiling, including suspension system
 - 2. Details of elements requiring coordination and those supported by the ceiling panels
- C. Sample:
 - 1. Two (2), 6 -inch by 6 -inch sample of specified acoustical panel
 - 2. Two (2), 8 -inch long sample of exposed main and cross runners
 - 3. Two (2), 8- inch long sample of cloud perimeter

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Acoustical Tile Ceiling will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

- C. Ceiling contractor shall coordinate installation with other ceiling mounted systems, particularly the automatic fire suppression system, to preclude interference with critical systems.
 - 1. Significant adjustments required, shall be brought to the attention of the Architect prior to implementation.

1.06 Delivery, Storage, and Handling

- A. Deliver Acoustical Tile Ceiling to Project Site in original protective wrapping and packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, type, and local Contact information.
- B. Handle and protect Acoustical Tile Ceiling from physical damage. Store materials in their original undamaged packaging in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Additional Material

- A. Furnish twelve (12) ceiling panels, that match products installed. Submit panels in a protective container, with a label on the container clearly identifying the contents and local contact information.
- B. Contractor shall verify, prior to submitting, that the Additional Materials are not damaged.

1.08 Warranty

- A. Warranty covers all work specified in this section, for a period of two (2) years.
- B. Manufacturer shall replace Acoustical Tile Ceiling components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for two (2) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Armstrong
 - 2. CertainTeed
 - 3. USG

2.03 Primary Suspension System

- A. All main beams and cross tees shall be, intermediate duty, commercial quality hot-dipped galvanized, double-web steel construction with $\frac{9}{16}$ -inch, exposed flange design.
 - 1. *Armstrong, Suprafine XL*, $\frac{9}{16}$ -inch exposed tee
 - 2. Structural Classification: Intermediate Duty
 - 3. Match the color of the selected ceiling tile.
- B. Attachment Devices:
 - 1. Size for five times design load indicated in ASTM C635
 - 2. Direct hung unless otherwise indicated
- C. Wire for Hangers and Ties:
 - 1. Class 1 zinc coating, soft temper, pre-stretched
 - 2. Yield stress load at least time three design load, but not less than 12 gauge.
- D. Accessories/Edge Moldings and Trim:
 - 1. Metal of types and profiles indicated or manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.04 Cloud Suspension System

- A. All main beams and cross tees shall be, intermediate duty, commercial quality hot-dipped galvanized, double-web steel construction with $\frac{9}{16}$ -inch, exposed flange design.
 - 1. *Armstrong, Suprafine XL*, $\frac{9}{16}$ -inch exposed tee
 - 2. Structural Classification: Intermediate Duty
- B. Trim system for suspended ceiling cloud:
 - 1. *Armstrong, Axiom Classic*: 2" height, straight perimeter trim.
 - 2. Extruded aluminum alloy 6063 trim channel.
- C. Accessories and Trim:
 - 1. *Armstrong, Axiom Classic*: Mitered corners, splices and connection clips
 - 2. StrongBack – Hot dipped galvanized cold rolled steel

2.05 Acoustical Panels

- A. *Armstrong -Optima, Tegular*
 - 1. Armstrong 3354 -Fiberglass
 - 2. 24 -inch by 24 -inch by 1 -inch, dimensions
 - 3. $\frac{9}{16}$ -inch square tegular, edge profile
 - 4. 0.95 Noise Reduction Coefficient (NRC)
 - 5. 0.57 pounds per Square Foot, weight

2.06 Installation

- A. Installation shall comply with ASTM C635, ASTM C636, and ASTM E580, except as modified
- B. Wire Supports:
 - 1. 12 -gauge, galvanized, steel wire
 - 2. 4 -feet on center along each main runner
 - 3. Each vertical wire shall be attached directly to structural support member above
 - 4. Wire shall be wrapped around itself a minimum of three full turns
 - 5. Wire loops shall be tightly wrapped and sharply bent to prevent any vertical movement
 - 6. Wires shall not attach to or bend around interfering material or equipment
 - 7. Trapeze, sized to resist dead load and lateral forces, or equivalent device shall be used where obstructions preclude direct suspension
 - 8. Main runner and/or cross runner ends shall be attached to the perimeter on two adjacent walls

- B. Ceiling Grid Members:
 - 1. Terminal ends of main runners and cross members shall be tied together or have some other approved means to prevent their spreading
 - 2. Direct concealed suspended ceiling systems shall have positively connected stabilizer bars or mechanically connected cross runners at a maximum spacing of 60 -inches
 - 3. Terminal ends of each cross runner and main runner shall be supported independently, a maximum of 8 -inches from each wall or ceiling discontinuity
- C. Lateral Bracing:
 - 1. Lateral force bracing, restraint point, spacing shall not exceed 12 -feet by 12 -feet
 - 2. Lateral force bracing consists of a compression strut and four (4), 12 -gauge, taunt, splayed bracing wires oriented 90 degrees from each other, with a slope, from the plane of the ceiling, not exceeding 45 degrees
 - 3. Bracing wire loops shall be tightly fastened with four (4) tight turns, within 1-½ Inches
 - 4. Strut, adequate to resist vertical component induced by bracing wires, shall be fastened to the main runner and extend up, and fastened, to a structural support member above
- D. Fixtures, Terminals, and Devices:
 - 1. Ceiling panels shall not support any light fixtures, air terminals or devices
 - 2. Attach light fixtures, ceiling mounted air terminals, and other devices to the ceiling grid runners
 - 3. Attach fixtures, terminals, or devices with a minimum of two (2) screws or approved fasteners, necessary to resist a horizontal force equal to the weight of the fixtures.
 - 4. Fixtures, terminals, or devices, weighing between 10 and 56 -pounds, shall be attached, to a structural support member above, with a minimum of two (2), 12 -gauge, slack safety wires
 - 5. Attach safety wires to the fixture at diagonal corners
 - 6. Fixtures weighing less than 10 -pounds shall have a single safety wire
 - 7. Fixtures weighing 56 -pounds, or more, shall be supported directly from a structural member above, by approved hangers
- E. Services within the Ceiling:
 - 1. Ceiling panels shall not support any light fixtures, air terminals or devices
 - 2. Services less than 20 -pounds shall be directly secured to the suspension system
 - 3. Services weighing between 20 and 56 -pounds shall have two (2), 12 -gauge, slack safety wires attached to the service and supported directly from a structural member above, by approved hangers
 - 4. Services weighing 56 -pounds, or more, shall be supported directly from a structural member above, by approved hangers

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not commence installation until all wet work, such as concrete and painting, has been completed and thoroughly dried, unless expressly permitted by manufacturer's in writing
- D. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Acoustical Tile Ceiling in accordance with manufacturer's written instructions and ASTM 636 per accepted industry standards.
- C. Installation shall conform, in as much as possible, to the configuration on the Drawings.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Replace damaged, or soiled, panels or components at no added cost.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Suspended Linear Wood Ceiling as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A641 – Specification for Zinc Coated (Galvanized) Carbon Steel Wire
 - 2. ASTM C635 - Specification for Metal Suspension Systems for Acoustical Tile Ceilings
 - 3. ASTM C636 - Recommended Installation of Ceiling Suspension Systems for Acoustical Tile
 - 4. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 5. ASTM E580 - Installation of Ceiling Suspension Systems in Areas Subject to Earthquake
 - 6. ASTM E1264- Classification for Acoustical Ceiling Products
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Shop Drawings:
 - 1. Dimensioned layout and details of suspended linear wood ceiling, including suspension system
 - 2. Details of elements requiring coordination and those supported by the ceiling
- C. Selection Material:
 - 1. Provide physical samples of the standard color range of wood, that is available from the Manufacturer named in the specifications.
 - 2. Physical samples required. Color charts will not be accepted.
 - 3. Once the Manufacturer is deemed acceptable and specific colors and series selected. Contractor shall submit two (2) samples of the designated wood.
 - 4. Submittals shall be scheduled to allow a sufficient period for review and not delay the schedule
- D. Samples:
 - 1. Two (2), min. 6 -inch long samples of specified wood plank
 - 2. Two (2), 8 -inch long sample of exposed main and cross runners

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Suspended Linear Wood Ceiling will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Fire Performance Characteristics: Identify ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 1. Surface Burning Characteristics: Tested by the Hardwood Plywood and Veneer Association (HPVA) under the test standard ASTM E-84 tunnel test and complying with ASTM E 1264 for Class A products.
 - a. Flame Spread: 25 or less
 - b. Smoke Developed: 50 or less
- D. Ceiling contractor shall coordinate installation with other ceiling mounted systems, particularly the automatic fire suppression system, to preclude interference with critical systems.
 - 1. Significant adjustments required, shall be brought to the attention of the Architect prior to implementation.

1.06 Delivery, Storage, and Handling

- A. Deliver Suspended Linear Wood Ceiling to Project Site in original protective wrapping and packaging with seals unbroken. All containers shall be labeled with manufacturer's name, product brand name, type, and local Contact information.
- B. Handle and protect Suspended Linear Wood Ceiling from physical damage. Store materials in their original undamaged packaging in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at no expense to the District. Including material damaged during construction.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one (1) year.
- B. Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.
- C. Manufacturer shall replace Suspended Linear Wood Ceiling components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- D. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.

- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. ASI Architectural
 - 2. CertainTeed
 - 3. Armstrong

2.03 Wood Planks

- A. 3-3/4" wide, wood planks, w/ 3/4 "reveals.
- B. Smooth finish, 'Caramelized' Bamboo

2.04 Suspension System

- A. Suspension system shall be specifically engineered for dimensioned wood, with reveals, parallel to longitudinal axis.
- B. Suspension system shall be specifically engineered to resist, code stipulated, seismic forces, while installed in a 'stepped' configuration as shown in the construction documents.
- C. Black suspension system components shall be assembled per manufacturers written directions, and suspended from the structure, and braced, in compliance with applicable codes.
- D. Contractor shall coordinate suspension and seismic bracing of system, to mitigate potential conflicts with Mechanical (HVAC), Fire Protection, and Lighting systems, above ceiling plane and at vertical step 'gaps.'
- E. Attachment Devices:
 - 1. Size for five times design load indicated in ASTM C635
 - 2. Direct hung unless otherwise indicated
- F. Wire for Hangers and Ties:
 - 1. Class 1 zinc coating, soft temper, pre-stretched
 - 2. Yield stress load at least time three design load, but not less than 12 gauge.
- G. Accessories/Edge Moldings and Trim:
 - 1. Metal of types and profiles indicated or manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.05 Suspension

- A. Wire Supports:
 - 1. 12 -gauge, galvanized, steel wire
 - 2. 4 -feet on center along each main runner
 - 3. Each vertical wire shall be attached directly to structural support member above
 - 4. Wire shall be wrapped around itself a minimum of three full turns
 - 5. Wire loops shall be tightly wrapped and sharply bent to prevent any vertical movement
 - 6. Wires shall not attach to or bend around interfering material or equipment
 - 7. Trapeze, sized to resist dead load and lateral forces, or equivalent device shall be used where obstructions preclude direct suspension
 - 8. Main runner and/or cross runner ends shall be attached to the perimeter on two adjacent walls

- B. Ceiling Grid Members:
 - 1. Terminal ends of main runners and cross members shall be tied together or have some other approved means to prevent their spreading
 - 2. Direct concealed suspended ceiling systems shall have positively connected stabilizer bars or mechanically connected cross runners at a maximum spacing of 60 -inches
 - 3. Terminal ends of each cross runner and main runner shall be supported independently, a maximum of 8 -inches from each wall or ceiling discontinuity
- C. Lateral Bracing:
 - 1. Lateral force bracing, restraint point, spacing shall not exceed 12 -feet by 12 -feet
 - 2. Lateral force bracing consists of a compression strut and four (4), 12 -gauge, taunt, splayed bracing wires oriented 90 degrees from each other, with a slope, from the plane of the ceiling, not exceeding 45 degrees
 - 3. Bracing wire loops shall be tightly fastened with four (4) tight turns, within 1-½ Inches
 - 4. Strut, adequate to resist vertical component induced by bracing wires, shall be fastened to the main runner and extend up, and fastened, to a structural support member above
- D. Fixtures, Terminals and Devices:
 - 1. Ceiling panels shall not support any light fixtures, air terminals or devices
 - 2. Attach light fixtures, ceiling mounted air terminals, and other devices to the ceiling grid runners
 - 3. Attach fixtures, terminals, or devices with a minimum of two (2) screws or approved fasteners, necessary to resist a horizontal force equal to the weight of the fixtures.
 - 4. Fixtures, terminals, or devices, weighing between 10 and 56 -pounds, shall be attached, to a structural support member above, with a minimum of two (2), 12 -gauge, slack safety wires.
 - 5. Attach safety wires to the fixture at diagonal corners.
 - 6. Fixtures weighing less than 10 -pounds shall have a single safety wire.
 - 7. Fixtures weighing 56 -pounds, or more, shall be supported directly from a structural member above, by approved hangers.
- E. Services within the Ceiling:
 - 1. Ceiling panels shall not support any light fixtures, air terminals or devices.
 - 2. Services less than 20 -pounds shall be directly secured to the suspension system.
 - 3. Services weighing between 20 and 56 -pounds shall have two (2), 12 -gauge, slack safety wires attached to the service and supported directly from a structural member above, by approved hangers
 - 4. Services weighing 56 -pounds, or more, shall be supported directly from a structural member above, by approved hangers.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.

- C. prior to commencing installation.
- D. Do not commence installation until all wet work, such as concrete and painting, has been completed and thoroughly dried, unless expressly permitted by manufacturer's in writing
- E. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Acoustical Tile Ceiling in accordance with manufacturer's written instructions and ASTM 636 per accepted industry standards.
- C. Installation shall conform, in as much as possible, to the configuration on the Drawings.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Replace damaged, or soiled, panels or components at no added cost.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Resilient Base as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM F1861 -Standard Specification for Resilient Wall Base

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Samples:
 - 1. Provide a sample of the full range of resilient base colors, from the Resilient Base Manufacturer that complies with the requirements of the specifications.
 - 2. Physical samples required. Color charts will not be accepted.
 - 3. Once the Manufacturer is deemed acceptable and specific colors are selected; Contractor shall submit three (3), 4 -inch long representative samples of wall base, in color selected

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Resilient Base will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Resilient Base to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Resilient Base from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.

- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Resilient Base that fails due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Burke
 - 2. Johnsonite
 - 3. Roppe

2.03 Materials

- A. Vinyl Wall Base:
 - 1. Type TV -Thermoplastic Vinyl
 - 2. 4 -inch high, Cove Base
 - 3. 4 -inch high, Straight Base
 - 4. 1/8 -inch thick
 - 5. Color to be selected from Manufacturers standard range of colors
- B. Adhesive
 - 1. Manufacturers standard adhesive for gypsum board walls

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.

- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Resilient Base in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Areas to receive resilient wall base shall be clean, fully enclosed, weather-tight, and maintained at a uniform temperature of at least 65°F for 24 hours before, during, and after the installation is completed. The resilient wall base and adhesives shall be conditioned in the same manner.
- D. Straight Base to be used in spaces having carpet tile.
- E. Coved Base to be used in spaces with exposed concrete floors.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Tile Carpeting as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Samples:
 - 1. Provide two full size samples of each finish product specified.
 - 2. Physical samples required. Color charts will not be accepted.

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Carpet Tile installation is free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Carpet Tiles to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Carpet Tile from physical damage. Store materials in their original undamaged protective wrapping in a clean, dry, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.06 Warranty

- a. 15 year, Standard Carpet Warranty.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Interface
 - 2. Mannington
 - 3. Shaw

2.03 Materials

- A. Carpet Tile
 - 1. Modular, Square – 24”x 24” maximum
 - 2. High-performance nylon bonded to resilient backing
 - 3. Tufted Loop Nylon construction
 - 4. Total recycled content , minimum 60%
 - 5. Soil/ Stain Protection treated
- B. Basis of Design - Interface
 - 1. Tile 1- Architectural Plans Collection
 - a. Product - *To Scale*
 - b. Color – 7775, '*Drawings*'
 - 2. Tile 2- View From Above Collection
 - a. Product – *Cloud Cover*
 - b. Color – 106477, '*Natural*'
- C. Adhesive
 - 1. Manufacturers recommended adhesive

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean, and free from any damage that would preclude installation.
 - 2. Verify that locations, and dimensions, are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

- D. Inspect all Carpet Tiles for damage or defects prior to installation.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Carpet Tile in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Carpet Tiles shall all be from the same dye lot. Carpet tiles shall be mixed prior to commencing installation to ensure uniformity in blend and finish appearance.
- D. Carpet Tile shall be installed per Interface Installation Guidelines, non-directional.
- E. Areas to receive Carpet Tile shall be clean, fully enclosed, and weather-tight. Areas to receive Carpet Tile shall be maintained at a uniform temperature between 65°F and 85°F, with relative humidity between 40% and 60%, for 72 hours before, during, and after the installation is completed.
- F. Carpet Tiles shall be removed from shipping cartons, and protective wrapping, and placed in the installation area a minimum of 48 hours prior to installation, to acclimate.

3.03 Installation Preparation

- A. Concrete substrate shall be inspected prior to commencing installation of Carpet Tile.
 - 1. Confirm that concrete slab to receive Carpet Tile is level per American Concrete Institute (ACI) standards. If out of level, correct per ACI recommendations.
 - 2. Patch cracks, holes, and deformities in the concrete slab per ACI recommendations.
 - 3. Concrete slab inspection and any corrective work required, shall be completed prior to moisture and alkalinity testing.
- B. Prior to commencing Carpet Tile installation, confirm that the moisture content of the concrete slab is < 80% per ASTM F2170.
- C. Prior to commencing Carpet Tile installation, confirm that the alkalinity level in the concrete slab is between 7.0 and 9.0.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and prepare and apply Paint as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 California, Volatile Organic Compounds (VOC) Limits

- A. Architectural paints and coatings shall comply with Volatile Organic Compounds (VOC) limits of the Air Resources Board (ARB) Architectural Coatings Suggested Control Measure, per Table 5.504.4.3, of the 2022 California Green Building Standards Code, unless more stringent local limits apply.
- B. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Non-Flat, or Non-Flat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36, and 4.37 of Chapter 5 Nonresidential Mandatory Measures 78 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Non-Flat, or Non-Flat-High Gloss VOC limit in Table 5.504.4.3. shall apply.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data:
 - 1. Provide Manufacturer's information for each product, to be incorporated into the work, to establish compliance with the specifications and conformance with the Manufacturer's written recommendations.
 - 2. Cross reference to paint system, appropriate for substrate, application, coverage, and finish. Include Manufacturer's recommendations for substrate preparation and application instructions.
- B. Samples:
 - 1. Once the Manufacturer, and specific products are deemed acceptable and specific colors are selected, provide a sample of the full range of paint colors, from the Paint Manufacturer that complies with the requirements of the specifications.
 - 2. Contractor shall submit three (3), Drawdowns of each paint color (topcoat) selected for application.
 - 3. Provide a drawdown of the finish (color) options stipulated for ferrous metal.
 - 4. Drawdowns shall be on, 8 ½ inches by 11 inches, rigid backing.

- C. Material:
1. Provide the Owner with complete, coordinated, file of all paint and coating finishes applied.
 2. File in 8 ½ inches by 11 inches format, shall consist of:
 - a. Drawdown of each approved finish and color
 - b. Permanently identifying location and extent of installation. Substrate.
 - c. Manufacturer, Supplier, and Contractor (Painting) contact information
 - d. Manufacturer's Product Identification and Information
 - i. Product Name
 - ii. Product Type
 - iii. Product Color- Name and Manufacturers' (custom) Formula
 - iv. Substrate preparation. Identify Primer, if utilized.
Where Primer was required or utilized, provide similar information for Primer.

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Paint will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Paint to Project Site in original, unopened, containers. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Paint from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Paint that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general performance desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.
- D. Provide the Manufacturer's best quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the one of the following manufacturers, or equal:
 - 1. Dunn Edwards
 - 2. PPG
 - 3. Sherwin-Williams

2.03 Materials

- A. Provide materials within each coating system that are compatible with one another and substrate indicated, under conditions of service and application as expressed by manufacturer.
- B. Provide products of a single manufacturer for each coat in a coating system.
- C. The following systems are intended to establish the minimum level of performance and quality that will be accepted.

2.04 Wood

- A. Primer:
 - 1. Zero VOC
 - 2. *Dunn Edwards, ECOSHIELD (W600) Latex Primer*
 - 3. One (1) coat
- B. Topcoat:
 - 1. Zero VOC, Modified Copolymer
 - 2. *Dunn Edwards, ECOSHIELD (W602), Low Sheen*
 - 3. Gloss Level 4: 20 to 35 Gloss Units at 60 degrees and 35 to 50 units at 85 degrees.
 - 4. Two (2) coats

2.05 Bamboo

- A. Stain/ Sealer:
 - 1. TWP, Total Wood Protectant
 - a. Per Manufacturer's written instructions
 - b. Color - As selected from Manufacturers standard range of colors
 - 2. As recommended by Bamboo vendor/ supplier
 - a. Enhance natural color and protect natural finish

2.06 Ferrous Metal

- A. Primer:
 - 1. Low VOC
 - 2. *Dunn Edwards, BLOC-RUST Premium (BRPR00), Primer*
 - 3. One (1) coat
- B. Topcoat 1:
 - 1. Zero VOC, Modified Copolymer
 - 2. *Dunn Edwards, SPARTAWALL (SWLL30), Eggshell*
 - 3. Gloss Level 3: 10 to 15 Gloss Units at 60 degrees and 15 to 30 units at 85 degrees.
 - 4. Two (2) coats
- C. Topcoat 2:
 - 1. Zero VOC, Modified Copolymer
 - 2. *Dunn Edwards, SPARTAWALL (SWLL40), Low Sheen*
 - 3. Gloss Level 4: 20 to 35 Gloss Units at 60 degrees and 35 to 50 units at 85 degrees.
 - 4. Two (2) coats

2.07 Gypsum Board

- A. Primer:
 - 1. Low VOC
 - 2. *Dunn Edwards, VINYLASTIC Premium (VNPR00), Primer*
 - 3. One (1) coat
- B. Topcoat 1:
 - 1. Zero VOC, Modified Copolymer
 - 2. *Dunn Edwards, SUPREMA (SPMA30), Eggshell*
 - 3. Gloss Level 3: 10 to 15 Gloss Units at 60 degrees and 15 to 30 units at 85 degrees.
 - 4. Two (2) coats
- C. Topcoat 2:
 - 1. Zero VOC, Modified Copolymer
 - 2. *Dunn Edwards, SUPREMA (SPMA40), Low Sheen*
 - 3. Gloss Level 4: 20 to 35 Gloss Units at 60 degrees and 35 to 50 units at 85 degrees.
 - 4. Two (2) coats

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to application, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that surfaces are finished, clean, dry, smooth and free from any damage or imperfections that would preclude painting.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive paint.
 - 3. Confirm that substrates and surface conditions are compatible with primers and topcoats.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing painting.
- C. Do not begin application until unsatisfactory conditions have been rectified.
- D. Protect, cover and/or mask installations, equipment or objects, including finished flooring, that cannot be removed from area(s) to be painted.
- E. Comply with Manufacturer's written recommendations and instructions for surface preparation.
- F. Apply Paint only under, environmental (*temperature and humidity*), conditions recommended by Manufacturer.

3.02 Installation, General

- A. Commencing application, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Apply Paint in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Signage as shown on the drawings and as specified herein.
- B. Per 2022 California Building Code, Title 24, Part 2, Volumes (1&2), Chapter 11B - 703, provide a Tactile Sign and a Visual Sign at the entries to both accessible restrooms.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
 - 1. ANSI A117.1 – Accessible and Usable Buildings and Facilities
- B. 2022 California Building Code, Title 24, Part 2, Volumes (1&2):
 - 1. Chapter 11B - 703, for accessible signage.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Samples
 - 1. Provide samples of the full range of Sign base colors, that are available, from the Sign Fabricator.
 - 2. Physical samples required. Color charts will not be accepted.
 - 3. Once the Fabricator is deemed acceptable and specific colors are selected; Contractor shall submit Two (2), full size samples of typical sign - color, Font and Font color selected.
- C. Shop Drawings, including, but not limited to:
 - 1. Sign schedule
 - 2. Sign configuration
 - 3. Details of raised characters
 - 4. Installation details, instructions
- D. Schedule submittals to provide sufficient time for review without potential delays to the schedule

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Signage will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.

- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages.

1.06 Delivery, Storage, and Handling

- A. Deliver Signage to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Signage from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Signage that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.
- D. All signs shall be accessible and comply with ANSI A117.1 in addition to the California Building Code, as noted.

2.02 Signs

- A. Visual Accessible Restroom Identification Signage:
 - 1. Per 2022 California Building Code, Title 24, Part 2, Volumes (1&2), Chapter 11B – 703.7.2.6.3.
 - 2. ¼ -inch thick, clear acrylic, matte finish, color similar to Polycarbonate Resin Panels, 08 84 00
 - 3. Square edged, matt finish
 - 4. Unisex Toilet - Equilateral triangle, with 12" long edges, superimposed on 12" diameter circle. Vertex of Triangle pointing upward. Triangle contrasting color to Circle.
- B. Tactile Accessible Restroom Identification Signage:
 - 1. Per 2022 California Building Code, Title 24, Part 2, Volumes (1&2), Chapter 11B – 703
 - 2. ¼ -inch thick, white acrylic with applied background
 - 3. Applied background shall be FS 15090 in Federal Standard 595C – BLUE
 - 4. Male, Female, and International Symbol of Accessibility Pictograms, in White, on Blue Base
 - 5. Below Pictogram, not in Pictogram Field place the word, 'RESTROOM'
 - 6. White letters (characters) shall be raised 1/32" above the Blue Base (background)
 - 7. Below the White Letters (characters) place the word 'Restrooms,' in (Grade 2) Braille

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Room identification signs shall be installed in compliance with ANSI A117.1 and the 2022 California Building Code.
- C. Position the Visual Accessible Restroom Identification Signage centered (horizontally) on the exterior face of the accessible door, locate it 59" A.F.F. (vertically).
- D. Place Tactile Accessible Restroom Identification Signage on latch side of wall, parallel to the closed door. Position the Sign between 9" and 12" (horizontally) from the door jamb. Ensure that there is an 18" (horizontal) clear floor space, centered on the sign. Locate the sign such that the baseline of the lowest Braille cells is 48" A.F.F.
- E. Mount signs to be level and plumb using double sided tape.
- F. Review positioning of Accessible Restroom Identification Signage to ensure compliance with ANSI A177.1 and 2022 California Building Code, Title 24, Part 2, Volumes (1&2), Chapter 11B – 703

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Toilet Accessories as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data:
 - 1. Manufacturer's data sheets for each product specified
- B. Schedule:
 - 1. Submit a schedule, indicating accessory type, quantity, and location to be installed

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Toilet Accessories will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Toilet Accessories to Project Site, sealed, in original protective wrapping. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Toilet Accessories from physical damage, in their original undamaged protective wrapping in a clean, protected location.
- C. Any accessories which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one (1) year.
- B. Manufacturer shall replace Toilet Accessories that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Provide products from the following manufacturer, or equal:
 - 1. Bobrick
 - 2. Bradley
- B. The following products and systems are intended to establish the minimum level of acceptable performance and quality.

2.03 Hat and Coat Hook

- A. *Bobrick, Surface-Mounted Hat and Coat Hook, B-6827*
 - 1. Finish: Satin-finish, stainless steel
 - 2. Mounting Height: Top of Hook at 40 -inches above finished floor (AFF)
 - 3. Location: Center, horizontally, on interior side of entry door.

2.04 Recessed Paper Towel Dispenser and Waste Receptacle

- A. *Bobrick, Paper Towel Dispenser and Waste Receptacle, B- 4369*
 - 1. Finish: Satin-finish, stainless steel
 - 2. Mounting: Mounting height per Manufacturer's written instructions to comply with 2022 California Building Code, Title 24, Part 2 (Volumes 1 & 2), Chapter 11B Accessibility.
 - 3. Location: Wall opposite lavatory, as shown on the drawings

2.05 Mirrors

- A. *Bobrick, Mirrors, B-165-1836,*
 - 1. 18 -inch by 36 -inch by $\frac{1}{4}$ -inch, frameless, safety glass mirror
 - 2. Mount mirror aligned with the center of the sink.

2.06 Soap Dispensers

- A. *Bobrick, Liquid Soap Dispenser, B-155*
 - 1. Finish: Satin-finish, stainless steel
 - 2. Mounting:
 - a. Top of dispenser at 46 -inches above finished floor (AFF)
 - b. Bottom of valve at, approximately, 38 -inches above finished floor (AFF)
 - c. Locate as shown on the drawings.

2.07 Grab Bars

- A. *Bobrick, B-6806, 1½ -inch Stainless Steel Grab Bar, lengths as shown*
 - 1. Finish: Satin-finish, stainless steel, with peened gripping surface

2. Mounting:
 - a. Top of gripping surface of horizontal Grab Bars at 36 -inches above finished floor (AFF)
 - b. 1½ -inch clear between face of Grab Bar, closest to wall, and finish wall surface, minimum.
3. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

2.08 Toilet Tissue Dispenser

A. *Bobrick, Surface Mounted Toilet Tissue Dispenser and Utility Shelf, B-2840*

1. Finish: Satin-finish, stainless steel
2. Mounting:
 - a. Top of dispenser (shelf) at 24 -inches above finished floor (AFF)
 - b. Centerline dispenser 8 -inches in front of water closet

2.09 Seat Cover Dispenser

A. *Bobrick, Recessed Toilet Seat-Cover Dispenser, B-3013*

1. Finish: Satin-finish, stainless steel
2. Mounting:
 - a. Mount Dispenser "upside down" above water closet (support wall)
 - b. Centerline of dispenser opening shall be at 40 -inches above finished floor (AFF)
 - c. Align exterior edge of dispenser with outside return of grab bar, furthest away from centerline of water closet

2.10 Mop and Broom Holder

A. *Bobrick, Stainless Steel Mop and Broom Holder, B-223*

1. Mount per Manufacturer's recommendation

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Ensure that backing support is properly installed and will support maximum imposed loads
- B. Verify that location of backing support is such that finished installation of accessories will not interfere with required clear access and elements within framed walls
- C. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- D. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- E. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Toilet Accessories in accordance with manufacturer's written instructions, to comply with 2022 California Building Code, Accessibility, Title 24, Part 2 (Volumes 1 & 2), Chapter 11B.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Fire Extinguishers as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. National Fire Protection Association (NFPA):
 - 1. NFPA 10 -Standard for Portable Fire Extinguishers

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
 - 1. Include test, refill or recharge schedules, procedures and recertification requirements.

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Fire Extinguishers will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Fire Extinguishers to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Fire Extinguishers from physical damage. Store components in their original undamaged protective wrapping in a clean, protected location.
- C. Any components which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Fire Extinguishers that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Kidde
 - 2. J.L. Industries
 - 3. Larsen's Manufacturing Company

2.03 Materials

- A. 4A:60B:C, 10 -pound extinguisher
- B. Semi-recessed Cabinet
 - 1. Clear anodized aluminum frame
 - 2. Bubble face view door

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Fire Extinguishers in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish and install Kitchen Appliances as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Contractor Submittal

- A. Product Data

1.04 Quality Assurance

- A. Provide Manufacturer's standard warranty.

1.05 Delivery, Storage, and Handling

- A. Deliver Kitchen Appliances to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Kitchen Appliances from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Upon arrival at site, confirm that appliances are not damaged or defective. Appliances found to damaged or defective shall be removed and replaced at no expense to the District.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure Appliances from a single source.

2.02 Criteria

- A. Must fit under Access Compliant Countertop.
 - 1. Top of Counter, 34"
 - 2. Refrigerator height, 32" maximum

2.03 Manufacturers

- A. Subject to compliance with requirements, provide products from the following manufacturer, or equal:
 - 1. Kitchen Aid
 - 2. Whirlpool
 - 3. Summit

2.04 Undercounter Refrigerator

- A. Summit – AL54
 - 1. Stainless Steel

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to installation.

3.02 Installation, General

- A. Install Kitchen Appliances in accordance with manufacturer's written instructions.

3.03 Protection and Cleaning:

- A. Clean installed Appliances. Ensure that all surfaces are free of dirt, dust, and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair or replace damaged Appliances, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish and install A-V Equipment as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Provide Manufacturer's standard warranty.

1.05 Delivery, Storage, and Handling

- A. Deliver A-V Equipment to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect A-V components from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Upon arrival at site, confirm that appliances are not damaged or defective. Appliances found to be damaged or defective shall be removed and replaced at no expense to the District.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure A-V Equipment from a single source.
- C. Projector and Screen remote control operated.

2.02 Projector

- A. 7,000 lumen, 4K enhancement, Laser light source, with mid-throw lens
- B. Rear, ceiling mount with Keystone correction
- C. EPSON, EB-PU1007W WUXGA 3LCD Laser Projector, or Equal
- D. Provide compatible mid-throw lens

2.03 Projection Screen

- A. Ambient Light Rejecting (ABL)
- B. High Grain, 1.3+, Gray, 4K Resolution
- C. Electric, ceiling mounted, tensioned
- D. 8' drop, with 16:9 ratio
- E. Recommended by Projector Manufacturer and/or projector compatible

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to installation.

3.02 Installation, General

- A. Install A-V Equipment in accordance with manufacturer's written instructions.

3.03 Protection and Cleaning:

- A. Clean installed A-V Equipment. Ensure that all surfaces are free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair or replace damaged Appliances, at no cost to the owner.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Casework and Countertops as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
- B. American Society for Testing and Materials (ASTM) International:
- C. American Woodwork Institute (AWI):
- D. Architectural Woodwork Standards (AWS):
- E. California Code of Regulations, Title 17, 93120-93120.12

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data:
 - 1. Quartz Countertops
- B. Shop Drawings:
 - 1. Casework installation configuration, materials, and detailing
- C. Bamboo Samples:
 - 1. Two (2) – Minimum, 6 -inch by 6 -inch samples of Bamboo finish panels
- D. Quartz Samples:
 - 1. Provide a sample box of the standard color range of quartz, that is available from the Manufacturer that will be submitted, based on the quartz range named in the specifications.
 - 2. Physical samples required. Color charts will not be accepted.
 - 3. Once the Manufacturer is deemed acceptable and specific colors and series selected; Contractor shall submit two (2) samples, minimum 4 -inch by 4 -inch of the selected quartz.
 - 4. Submittals shall be timed to provide for sufficient review time and not delay the schedule

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Casework and Countertops will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Fabricator must have a minimum of Five-year's experience fabricating and installing custom casework, including verifiable experience with fabrication and installation of Bamboo casework.

1.06 Delivery, Storage, and Handling

- A. Deliver Casework and Countertops to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Casework and Countertops from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be immediately repaired, such that there is no visible evidence of the repair or removed and replaced at no expense to the District.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Casework and Countertops that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure Casework and Countertops from a single source to provide for standardization of installation, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.
- D. Manufactured without urea formaldehyde

2.02 Casework

- A. AWS Premium Grade
- B. Face Frame Construction
- C. Flush Overlay Doors and Drawer Fronts
 - 1. ¼ -inch reveal

- D. Wall Cabinets
 - 1. Depth: 12 -inches
 - 2. Height: 30 -inches
 - 3. Width: Per drawings
- E. Base Cabinets
 - 1. Depth: 24 -inches
 - 2. Height: 34 -inches, including countertop
 - 3. Width: Per drawings
- F. Flush Overlay Doors and Drawer Fronts
 - 1. $\frac{1}{4}$ -inch reveal
- G. Finish:
 - 1. Vertical Grain Natural Bamboo
 - 2. Horizontal Orientation
 - 3. Clear sealed

2.03 Wall Cabinets

- A. Cabinet, Side Panels
 - 1. Non-exposed
 - a. Hardwood Plywood
 - b. $\frac{1}{2}$ -inch
 - 2. Exposed
 - a. Vertical Grain Natural Bamboo, Plywood
 - b. Horizontal orientation
 - c. $\frac{1}{2}$ -inch
- B. Cabinet, Back Panel
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{1}{2}$ -inch
- C. Cabinet, Bottom
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{1}{2}$ -inch
- D. Cabinet, Top
 - 1. Hardwood Plywood:
 - a. $\frac{1}{2}$ -inch
- E. Face Frame:
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
 - c. Exposed edge banding, Thermally fused Vertical Grain Natural Bamboo
- F. Flat Flush Door
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
- G. Shelf
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
 - c. Exposed edge banding, Thermally fused Vertical Grain Natural Bamboo

- H. Hardware
 - 1. Hinges:
 - a. European concealed
 - b. Adjustable
 - 2. Shelf Tabs
 - a. 200 -pound load support
 - b. Stainless steel pins in bored holes
 - 3. Pulls
 - a. Square Bar Pull
 - b. $\frac{3}{8}$ -inch square steel
 - c. 1 -inch projection
 - d. 8 -inch length
 - e. Satin nickel finish
 - 4. Stop Silencers
 - a. On doors

2.04 Base Cabinets

- A. Cabinet, Side Panels
 - 1. Non-exposed
 - a. Hardwood Plywood
 - b. $\frac{1}{2}$ -inch
 - 2. Exposed
 - a. Vertical Grain Natural Bamboo, Plywood
 - b. Horizontal orientation
 - c. $\frac{1}{2}$ -inch
- B. Cabinet, Back Panel
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{1}{2}$ -inch
- C. Cabinet, Bottom
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{1}{2}$ -inch
- D. Cabinet, Top
 - 1. Hardwood Plywood:
 - a. $\frac{1}{2}$ -inch
- E. Face Frame:
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
- F. Doors: Flat Flush
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
- G. Shelf
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. $\frac{3}{4}$ -inch
 - c. Exposed edge banding, Thermally fused Vertical Grain Natural Bamboo

- H. Drawer Box
 - 1. Sides, Back, and Sub Front
 - a. Solid hardwood
 - b. 1/2 -inch
 - c. Premium grade construction
 - 2. Bottom
 - a. Vertical Grain Natural Bamboo, Plywood
 - b. 1/4 -inch
 - c. Dado support
- I. Drawer Fronts: Flat Flush
 - 1. Vertical Grain Natural Bamboo, Plywood
 - a. Horizontal orientation
 - b. 3/4 -inch
 - c. Mechanically fastened
- J. Connectors
 - 1. Solid hardwood
 - a. 1/2 -inch
 - b. Mechanically fastened, Pocket screw joint
- K. Hardware
 - 1. Hinges:
 - a. European concealed
 - b. Adjustable
 - 2. Glides
 - a. Undermount, steel, full extension
 - b. 75 -pound static, 50 -pound dynamic
 - 3. Shelf Tabs
 - a. 200 -pound load support
 - b. Stainless steel angle supports w/pins in bored holes, per AWI standards
 - 4. Pulls
 - a. Square Bar Pull
 - b. 3/8 -inch square steel
 - c. 1 -inch projection
 - d. 8 -inch length
 - e. Satin nickel finish
 - 5. Stop Silencers
 - a. On doors

2.05 Countertops

- A. Materials
 - 1. Quartz:
 - a. 3/4 -inch thick
 - b. Color; as selected
 - 2. Countertop Base:
 - a. 1/2 -inch hardwood Plywood
 - 3. Mounting Adhesive:
 - a. Non- urea formaldehyde
- B. Manufacturers
 - 1. Provide Quartz from the following manufacturer, or equal:
 - a. Caesarstone
 - b. Cambria
 - c. Silestone

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Contractor shall provide continuous 6 -inch by 16-gauge, horizontal, metal framing support for positive anchorage of wall cabinets, at two (2) separate levels.
- C. Ensure positive structural anchorage of wall cabinet to backing, commensurate with seismic zone.
- D. Provide similar backing support and anchorage at upper level of base cabinet.
- E. Reinforce supporting vertical studs with Metal Stud Cantilever Plates

3.03 Countertops

- A. Provide 1½ -inch, square edge at Quartz countertop.
- B. Secure countertop to base cabinet.

3.04 Protection and Cleaning

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish and install Landscape Benches as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings and general provisions of the Contract, General and Supplementary Conditions and Division 1 Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

- A. Contractor is directed to submittal procedures stipulated in Section 01 33 00 Contractor Submittal
- B. Product Data

1.04 Quality Assurance

- A. Provide Manufacturer's standard warranty.

1.05 Delivery, Storage, and Handling

- A. Deliver Benches to Project Site in original protective wrapping. Packaging shall be labeled with Manufacturer's name, product brand name and type.
- B. Upon arrival at site, confirm that Benches are not damaged nor defective. Benches found to damaged or defective shall be replaced at no expense to the District.

PART 2 PRODUCTS

2.01 General

- A. The use of Manufacturer's or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.

2.02 Manufacturers

- A. Tree Top Products
The Bench Factory
222 State Street
Batavia, IL 605110

(877) 214-7402

2.03 Product

- A. Champion Bench (SKU- 2ZK2162-TN)
- B. 6', Inground, Recycled Plastic, Powder Coated Steel, Stainless Steel hardware

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to installation.
- C. Confirm required clearances.

3.02 Installation, General

- A. Center Benches between Planters, for installation.
- B. Install Benches in accordance with manufacturer's written instructions.
- C. Ensure that seat height of all Benches is 18" above the finish walking surface.

3.03 Protection and Cleaning:

- A. Clean installed Benches. Ensure that all surfaces are free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair or replace damaged Benches, at no cost to the District.
- B. Submit Warranty to Owner, as specified.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Provide specialized Engineering, Design, Procurement, Installation, and other related services necessary to design, configure, procure, and install a complete and operable non-residential, Exterior Water Feature, as shown on the Drawings.
- B. Water Feature components, including water basin, spillway, runnel, pump, electronic water control system, timer, pump, fiberglass support grid, polished river stones, and submersible low-voltage up-light fixtures. Installation of water feature components shall be coordinated, with concrete, masonry, electrical, plumbing, and landscape Contractors.
- C. Furnish all Engineering, labor, tools, equipment, materials, and incidentals required to design and install Two (2), complete water features, as shown on the drawings.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI)
- B. American Society of Mechanical Engineers (ASME)
- C. American Society for Testing and Materials (ASTM) International
- D. American Water Works Association (AWWA)
- E. Underwriters Laboratories (UL)

1.04 Submittals

- A. Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.
- B. Product Data
 - 1. Equipment characteristics, capacities, required input, delivery output, and utility requirements,
 - 2. Connectivity, communication, reporting, reader, controls, and display.
 - 3. Unit construction, housing materials, critical dimensions, mounting,
- C. Shop Drawings
 - 1. Equipment assembly, components, mounting, installation, and critical maintenance.
 - 2. Equipment critical dimensions and required clearances.

1.05 Quality Assurance

- A. All materials shall be new and shall conform to applicable standards.
- B. Work shall be executed by skilled workmen to ensure high quality workmanship.
- C. Equipment Supplier shall be responsible for sizing, selecting, and providing equipment appropriate to the installation and required performance.

1.06 Delivery, Storage, and Handling

- A. Deliver equipment, components, and accessories to Project Site in original protective packing labeled with manufacturer's name, product brand name and type.
- B. Any components which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.07 Warranty

- A. Contractor shall warrant all materials to be free from defects for one (1) year from date of final Project Acceptance. Any materials found to be defective, within that timeframe, shall be removed, replaced, and installed at no cost to the District.

PART 2 PRODUCTS

2.01 General

- A. ¼" stainless steel plate spillway, as shown on drawings, with four-sided runnel at inlet.
- B. ¼" stainless steel plate water basin.
- C. Electronic water control system, with timer, controls, pump, water supply inlet, and accessories.
- D. Submersible, low-voltage uplighting.
- E. ½" black fiberglass grid with support legs. Top of grid +4"
- F. 1"-2" black polished (rounded) river stone.

2.02 Performance Requirements

- A. Satin finish, stainless plate steel spillway to be cast into concrete with positive slope and overhang.
- B. Water supply to be cast-in concrete and daylight below Runnel at end of Spillway.
- C. Satin finish, stainless plate steel water basin with provisions made to accommodate water circulation line and uplighting power.
- D. Recirculating Water Pump sized for volume of water described on drawings, and capable of delivering an even, unimpeded, flow of water, over the spillway.
- E. Electronic Water Control System, Pump, and Water Supply to be located in planter area, remote from water basin.
- F. Submersible, low-voltage uplighting similar to AQ Lighting, LU-210. Provide sufficient fixtures to provide even soft white (2,700k) 'glow' and accent spillway drop.

2.03 Installation Materials and Accessories

A. Plumbing

1. Provide appropriate type, size, and schedule piping and tubing. Black, flexible PVC, and/or stainless steel as appropriate for installation. Provide compatible connections, and terminations, including seals, fasteners, and adhesives necessary to facilitate water circulation between basin and pump and between pump and spillway, per industry standards, as recommended by Pump Manufacturer, and required by Agencies Having Jurisdiction.
2. Remote water level sensor, filter, and oxygenator, as may be required, or as recommended by pump manufacturer, within a moisture resistant enclosure, capable of being placed below grade, in adjacent planter, and remain accessible.
3. Provide waterproof connector or other means to provide positive seal where plumbing or control wiring penetrates enclosure.

B. Electrical

1. UL Labeled conductors and power cable specifically listed for underwater use with positive seals at connectors.
2. Waterproof pin and socket connectors as appropriate. Provide positive sealed connections to submerged lighting fixtures.
3. Moisture resistant enclosure, capable of being placed below grade, in adjacent planter, and remain accessible.
4. Provide Ground Fault protection

PART 3 EXECUTION

3.01 General

- A. Coordinate power and water supply points and routing, prior to placement of masonry and concrete.
- B. Coordinate routing of piping and tubing through masonry and through cast-in-place concrete. Establish entry and exit points.
- C. Coordinate critical (horizontal and vertical) dimensions and anchorage details for Spillway and Water Basin.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of preparatory conditions and assumption of responsibility for satisfactory performance.
- B. Facilitate installation of components in accordance with manufacturer's written instructions, per accepted industry standards, and in compliance with applicable Codes, Regulations, Ordinances and Statutes enforced by the Authorities Having Jurisdiction.
- C. Upon completion of masonry and concrete structures, confirm proper placement of critical water feature components.
- D. Install all components in compliance with their respective industry standard.

3.03 Start-up

- A. Complete installation and start check/validation in accordance with Manufacturer's written instructions.

- B. Validate power and water supply, quality, and quantity.
- C. Complete operation check of water circulation and level maintenance.
- D. Confirm control and timer operation. Run through complete cycles.
- E. Set operation. Do not operate until Substantial Completion.
- F. Begin Operation upon Project turn-over.
- G. Demonstrate operation and provide District with Maintenance and Operations Manual.

3.04 Protection and Cleaning

- A. Clean installed Equipment and Accessories to be free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

PART 1 GENERAL

1.02 Scope of Work

- A. Furnish all labor, equipment, materials, tools, and incidentals required, and install a Water Based Fire Suppression System as shown on the drawings and as specified herein.
- B. Automatic Fire Suppression System documentation shall be prepared by a Fire Protection Engineer, registered in the State of California, necessary to obtain requisite Permits from the City of Santa Barbara, for the installation of the approved system.

1.03 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.04 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI):
- B. American Society of Mechanical Engineers (ASME):
- C. American Society for Testing and Materials (ASTM) International:
- D. Factory Mutual Approvals (FM):
- E. National Fire Protection Association (NFPA):
- F. Underwriters Laboratories (UL):

1.05 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Submit sprinkler system drawings identified as "working plans" and calculations according to NFPA 13. Submit required number of sets to authorities having jurisdiction for review, comment, and approval. Include system hydraulic calculations.
- C. Submit test reports and certificates as described in NFPA 13.

1.06 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Water Based Fire Suppression System will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.

- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building, against faulty workmanship and damages attributable to the installation.

1.07 Delivery, Storage, and Handling

- A. Deliver Water Based Fire Suppression System components to Project Site in original protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Water Based Fire Suppression System components from physical damage. Store in a clean, protected location.
- C. Any components which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.08 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Water Based Fire Suppression System components that fail due to materials or production workmanship within the specified warranty period, at no cost to the District.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Performance Requirements

- A. Design and Installation Approval: Acceptable to authorities having jurisdiction
- B. Hydraulically design sprinkler systems according to NFPA 13
- C. Comply with NFPA 13 and NFPA 70
- D. UL-listed and -labeled and FM-approved pipe and fittings.

2.03 Pipe and Fittings

- A. Steel Pipe: ASTM A 53/A 53M, ASTM A 135, or ASTM A 795
- B. Copper Tube: ASTM B 88, Type L or M; drawn temper
- C. CPVC Plastic Pipe: ASTM F 442/F 442M, UL 1821, 175-psig rating, made in NPS for sprinkler service. Include "Listed" and "CPVC Sprinkler Pipe" marks on pipe

- D. Cast-Iron Threaded Flanges: ASME B16.1, Class 250, raised ground face, bolt holes spot faced
- E. Cast-Iron Threaded Fittings: ASME B16.4, Class 250, standard pattern
- F. Grooved-End Fittings: UL-listed and FM-approved, ASTM A 536, Grade 65-45-12 ductile iron or ASTM A 47, Grade 32510 malleable iron, with grooves or shoulders to accept grooved couplings.
- G. Grooved-End Couplings: UL 213, ASTM A 536 ductile-iron or ASTM A 47 malleable-iron housing, with enamel finish. Include gaskets, bolts, and accessories
- H. Wrought-Copper Fittings: ASME B16.22, streamlined pattern
- I. Steel Press-Seal Fittings: UL 213, FM approved, 175-psig pressure rating, for use with Schedule 5, plain-end, steel pipe and fittings; with butylene O-rings, and pipe stop
- J. CPVC Plastic Pipe Fittings: ASTM F 438 for NPS 3/4 to NPS 1-1/2 and ASTM F 439 for NPS 2, UL listed, 175-psig rating, for sprinkler service. Include "Listed" and "CPVC Sprinkler Fitting" marks on fittings
- K. Provide hangers, supports, and seismic restraints with UL listing and FM approval for fire-protection systems

2.04 Valves

- A. Two-Piece Ball Valves with Indicators:
 - 1. Manufacturers:

Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

 - a. NIBCO Inc.
 - b. Victaulic Company
 - 2. Description: UL 1091, and FM Global Class Number 1112, Forged brass or bronze, 175 psig working pressure.
 - 3. End Connections for Valves NPS 1 through NPS 2: Threaded ends.
 - 4. End Connections for Valves NPS 2-1/2: Grooved ends.
- B. Bronze Butterfly Valves with Indicators:
 - 1. Manufacturers:

Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

 - a. Fivalco, Inc.
 - b. Global Fire Sprinkler Corporation
 - c. Milwaukee Valve Company
 - 2. Description: UL 1091, and FM Global Class Number 1112, Forged brass or bronze, 175 psig working pressure.
 - 3. End Connections for Valves NPS 1 through NPS 2: Threaded ends.
 - 4. End Connections for Valves NPS 2-1/2: Grooved ends.
- C. Bronze OS&Y Gate Valves:
 - 1. Manufacturers:

Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

 - a. Milwaukee Valve Company.
 - b. NIBCO Inc.
 - c. United Brass Works, Inc.

2. Description: UL 262, cast bronze, solid wedge, outside screw and yoke, rising stem, 175 psig working pressure.
- D. Check Valves:
1. Manufacturers:
Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Global Fire Sprinkler Corporation.
 - b. Tyco Fire products LP.
 - c. United Brass Works, Inc.
 2. Description: UL 312 and FM Group standard for swing check valves, Class Number 1210, 175 psig working pressure, Cast iron, or bronze with bronze clapper
- E. Alarm Check Valves:
1. Manufacturers:
Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. NIBCO Inc.
 - b. Tyco Fire products LP.
 - c. Victaulic Company
 2. Description: UL 193, 175-psig working pressure, designed for horizontal or vertical installation, with cast-iron, bronze grooved seat with O-ring seals, and single-hinge pin and latch design. Include trim sets for bypass, drain, electric sprinkler alarm switch, pressure gages, retarding chamber, fill-line attachment with strainer, and drip cup assembly.
- F. Automatic (Ball Drip) Drain Valves:
1. Manufacturers:
Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Reliable Automatic Sprinkler Co., Inc. (The).
 - b. Tyco Fire products LP.
 - c. Victaulic Company
 2. Description: UL 1726, 175-psig working pressure NPS 3/4, ball check device with threaded end connections.

2.05 Sprinklers

- A. Manufacturers:
Manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Tyco Fire products LP
 2. Viking Corporation
- B. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide" listing published by FM Global.
1. Pressure Rating for Residential Sprinklers: 175 psig maximum
 2. Pressure Rating for Automatic Sprinklers: 175 psig minimum.

- C. Automatic Sprinklers with Heat-Responsive Element:
 - 1. Nonresidential Applications: UL 199
 - 2. Residential Applications: UL 1626
 - 3. Early-Suppression, Fast-Response Applications: UL 1767
 - 4. Characteristics: Nominal 1/2-inch orifice with Discharge Coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.
- D. Sprinkler Finishes: Chrome plated
- E. Sprinkler Escutcheons (for Ceiling and Sidewall Mounted): Chrome-plated steel, one piece, flat.
- F. Sprinkler Guards:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Tyco Fire Products LP
 - b. Viking Corporation.
 - 2. Description: UL 199, wire cage with fastening device for attaching to sprinkler.
- G. Sprinkler Cabinets: Finished steel cabinet and hinged cover, with space for minimum of six spare sprinklers plus sprinkler wrench, suitable for wall mounting. Include number of sprinklers required by NFPA 13 and one wrench for sprinklers. Include separate cabinet with sprinklers and wrench for each style sprinkler on Project.

2.06 Piping Specialties and Alarm Devices

- A. Wall-Type Fire Department Connection:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. American Fire Hose & Cabinet
 - b. Elkhart Brass Mfg. Co., Inc.
 - c. Guardian Fire Equipment, Inc.
 - 2. Description: UL 405, flush, with cast-brass body; NH-standard thread inlets matching local fire department threads.
 - 3. Finish: Polished chrome plated.
- B. Yard-Type Fire Department Connection:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Elkhart Brass Mfg. Co., Inc.
 - b. Fire Protection Products, Inc.
 - c. Fire-End & Croker Corporation.
 - 2. Description: UL 405, flush, with cast-brass body; NH-standard thread inlets matching local fire department threads
 - 3. Finish: Polished chrome plated.
- C. Water-Motor-Operated Alarms:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Globe Fire Sprinkler Corporation.
 - b. Tyco Fire Products LP.
 - c. Victaulic Company.
 - d. Viking Corporation.

2. Description: UL 753, mechanical-operation type with pelton-wheel operator with shaft length, bearings, and sleeve to suit wall construction and 10-inch-diameter, cast-aluminum alarm gong with red-enamel factory finish. Include NPS 3/4 inlet and NPS 1 drain connections.
- D. Water-Flow Indicators:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Viking Corporation.
 - b. WATTS.
 2. Description: UL 346, electrically supervised, paddle-type, with 250-psig pressure rating; designed for horizontal or vertical installation. Includes two SPDT circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; with factory-set, field-adjustable retard element to prevent false signals, tamperproof cover sends signal if removed.
- E. Pressure Switches:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Tyco Fire Products LP
 - b. Viking Corporation.
 2. Description: UL 346, electrical-supervision-type, water-flow switch with retard feature. Include SPDT, normally closed contacts and design that operates on rising pressure and signals water flow.
- F. Valve Supervisory Switches:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Fire-Lite Alarms, Inc.; a Honeywell International company.
 - b. Kennedy Valve Company; a division of McWane, Inc.
 - c. Potter Electric Signal Company, LLC.
 2. Description: UL 346, electrically supervised; SPDT, with normally closed contacts. Include design that signals controlled valve is in other than fully open position.
- G. Pressure Gages:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AMETEK, Inc.
 - b. Ashcroft Inc.
 - c. Brecco Corporation
 - d. WIKA Instrument Corporation.
 2. Description: UL 393, 3-1/2- to 4-1/2-inch-diameter dial with dial range of 0 to 250 psig.

2.07 Sleeves

- A. Galvanized-Steel-Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, with plain ends.
- B. Galvanized-Steel-Sheet Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.
- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.

2.08 Sleeve-Seal Systems

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Advance Products & Systems, Inc.
 - 2. CALPICO, Inc.
 - 3. Metraflex Company (The)
 - 4. Pipeline Seal and Insulator, Inc.
 - 5. Proco Products, Inc.

- B. Description: Modular sealing-element unit, designed for field assembly, for filling annular space between piping and sleeve.
 - 1. Sealing Elements: EPDM-rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
 - 2. Pressure Plates: Carbon steel.
 - 3. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

2.09 Floor Plates

- A. One-Piece Floor Plates: Cast-iron flange.
- B. Split-Casting Floor Plates: Cast brass with concealed hinge.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.

- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.

- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Install section elements in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 General Piping Installations

- A. Install piping free of sags and bends.

- B. Install fittings for changes in direction and branch connections.

- C. Sleeves:
 - 1. Install sleeves for piping passing through penetrations in floors, partitions, roofs, and walls
 - 2. For sleeves that will have sleeve-seal system installed, select sleeves of size large enough to provide 1-inch annular clear space between piping and concrete slabs and walls.
 - 3. Install sleeves in concrete floors, concrete roof slabs, and concrete walls as new slabs and walls are constructed.
- D. Escutcheons and Floor Plates:
 - 1. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.
 - 2. Install escutcheons with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
 - 3. Install floor plates for piping penetrations of equipment-room floors.
 - 4. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.
- E. Install unions at final connection to each piece of equipment.

3.04 Service-Entrance Piping

- A. Water-Main Connection: Arrange with water utility company for tap of size and in location indicated in water main.
- B. Water-Main Connection: Tap water main according to requirements of water utility company and of size and in location indicated.
- C. Connect sprinkler piping to water-service piping for service entrance to building.
- D. Install shutoff valve, backflow preventer, pressure gage, drain, and other accessories indicated at connection to water-service piping.

3.05 Sprinkler Piping Installation

- A. Install "Inspector's Test Connections" in sprinkler piping, complete with shutoff valve.
- B. Install sprinkler zone control valves, test assemblies, and drain headers adjacent to standpipes.
- C. Install ball drip valves to drain piping between fire department connections and check valves. Drain to floor drain or outside building.
- D. Install alarm devices in piping systems and connect to fire-alarm system.
- E. Protect piping from earthquake damage as required by NFPA 13.
- F. Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Install gages to permit removal and install where they will not be subject to freezing.
- G. Install fire-protection service valves supervised-open, located to control sources of water supply except from fire department connections. Where there is more than one control valve, provide permanently marked identification signs indicating portion of system controlled by each valve.
- H. Install check valve in each water supply connection. Install backflow preventers in potable-water supply sources.
- I. Install alarm check valves for proper direction of flow, including bypass check valve and retard chamber drain line connection.

3.06 Piping Schedule

- A. Use steel pipe with threaded, press-seal, roll-grooved, or cut-grooved joints.
 - 1. For steel pipe joined by threaded fittings, use Schedule 40.
 - 2. For steel pipe joined by welding or roll-grooved pipe and fittings, use Schedule 10
 - 3. For steel pipe NPS 2 and smaller, joined by press-seal fittings, use Schedule 5 pipe, fabricated with manufacturer's press-seal tools.
- B. Use copper tube with wrought-copper fittings and brazed joints.
- C. Use CPVC plastic pipe and fittings and metal-to-plastic transition fittings with solvent-cemented joints.
- D. Pipe between Fire Department Connections and Check Valves: Use galvanized-steel pipe with flanged or threaded joints.
- E. Install shutoff valve, check valve, backflow preventer, pressure gage, drain, and other accessories indicated at connection to water service piping.

3.07 Testing

- A. Flush, test, and have sprinkler piping systems inspected for acceptance, to NFPA 13.

3.08 Protection and Cleaning

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the DISTRICT.

END OF SECTION

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- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Materials

- A. Valve Sizes: Same as upstream piping unless otherwise indicated.
- B. Valves in Insulated Piping: With 2-inch stem extensions.
- C. One-Piece, Brass Ball Valves
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Apollo.
 - b. KITZ Corporation.
 - c. NIBCO.
 - 2. Description:
 - a. Standard: MSS SP-110.
 - b. CWP Rating: 400 psig
 - c. Body Design: One piece.
 - d. Body Material: Forged brass or bronze
 - e. Ends: Threaded and soldered
 - f. Seats: PTFE.
 - g. Stem: Brass or stainless steel.
 - h. Ball: Chrome-plated brass or stainless steel
 - i. Port: Reduced.
- D. Class 125, Bronze Swing Check Valves with Bronze Disc:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. American Valve, Inc.
 - b. Crane; Crane Energy Flow Solutions.
 - c. Hammond Valve.
 - 2. Description:
 - a. Standard: MSS SP-80, Type 3.
 - b. CWP Rating: 200 psig.
 - c. Body Design: Horizontal flow.
 - d. Body Material: ASTM B 62, bronze.
 - e. Ends: Threaded or soldered. See valve schedule articles.
 - f. Disc: Bronze.
- E. Class 125, NRS, Bronze Gate Valves:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. American Valve, Inc.
 - b. Crane; Crane Energy Flow Solutions.
 - c. Hammond Valve.

2. Description:
 - a. Standard: MSS SP-80, Type 1.
 - b. CWP Rating: 200 psig.
 - c. Body Material: Bronze with integral seat and screw-in bonnet.
 - d. Ends: Threaded or solder joint
 - e. Stem: Bronze.
 - f. Disc: Solid wedge; bronze.
 - g. Packing: Asbestos free.
 - h. Handwheel: Malleable iron, bronze, or aluminum.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Use gate and ball valves for shutoff duty; globe and ball for throttling duty.
- C. Locate valves for easy access and provide separate support where necessary.
- D. Install valves for each fixture and item of equipment.
- E. Install three-valve bypass around each pressure-reducing valve using throttling-type valves
- F. Install valves in horizontal piping with stem at or above center of pipe.
- G. Install valves in a position to allow full stem movement.
- H. Install check valves for proper direction of flow in horizontal position with hinge pin level.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection.

END OF SECTION

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**GWSD, NEW ADMINISTRATION BUILDING
22 05 29 HANGERS AND SUPPORTS FOR
PLUMBING PIPING AND EQUIPMENT**

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Hangers and Supports for Plumbing Piping and Equipment as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Hangers and Supports for Plumbing Piping and Equipment will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Hangers and Supports for Plumbing Piping and Equipment to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Hangers and Supports for Plumbing Piping and Equipment from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Hangers and Supports for Plumbing Piping and Equipment that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Hangers and Supports for Plumbing Piping and Equipment

- A. Carbon-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
 - 3. Nonmetallic Coatings: Plastic coating, jacket, or liner
 - 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping
 - 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel
- B. Copper Pipe Hangers:
 - 1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
 - 2. Hanger Rods: Continuous-thread rod, nuts, and washer made of copper-coated steel
- C. Fastener Systems
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless-steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used
- D. Miscellaneous Metals
 - 1. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
 - 2. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - a. Properties: Nonstaining, noncorrosive, and nongaseous
 - b. Design Mix: 5000-psi, 28-day compressive strength.

2.03 Performance

- A. Structural Performance: Hangers and supports shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7
 - 1. Design supports for multiple pipes capable of supporting combined weight of supported systems and systems contents
 - 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components
 - 3. Seismic-restraint hangers and supports for piping and equipment and obtain approval from authorities having jurisdiction.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Comply with MSS SP-69 and MSS SP-89. Install building attachments within concrete or to structural steel.
- C. Install hangers and supports to allow controlled thermal and seismic movement of piping systems
- D. Install powder-actuated fasteners and mechanical-expansion anchors in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
- E. Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment
- F. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
 - 1. Adjustable Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated stationary pipes, NPS 1/2 to NPS 30.
 - 2. Pipe Hangers (MSS Type 5): For suspension of pipes, NPS 1/2 to NPS 4, to allow offcenter closure for hanger installation before pipe erection.
 - 3. Adjustable Steel Band Hangers (MSS Type 7): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8
 - 4. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8
 - 5. Adjustable Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 2.
- G. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
 - 1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers, NPS 3/4 to NPS 20.
 - 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers, NPS 3/4 to NPS 20, if longer ends are required for riser clamps.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the DISTRICT.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials and incidentals required, and install Vibration and Seismic Controls for Plumbing Piping and Equipment as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Vibration and Seismic Controls for Plumbing Piping and Equipment will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Vibration and Seismic Controls for Plumbing Piping and Equipment to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Vibration and Seismic Controls for Plumbing Piping and Equipment from physical damage. Store materials in protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Vibration and Seismic Controls for Plumbing Piping and Equipment that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Vibration Controls

- A. Elastomeric Isolation Pads: .
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Fabrication: Single or multiple layers of sufficient durometer stiffness for uniform loading over pad area.
 - 3. Size: Factory or field cut to match requirements of supported equipment.
 - 4. Pad Material: Oil and water resistant with elastomeric properties infused nonwoven cotton or synthetic fibers.
 - 5. Surface Pattern: Waffle pattern.
 - 6. Load-bearing metal plates adhered to pads.
- B. Double-Deflection, Elastomeric Isolation Mounts: .
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation
 - c. Isolation Technology, Inc.
 - 2. Mounting Plates:
 - a. Top Plate: Encapsulated steel load transfer top plates, factory drilled and threaded with threaded studs or bolts.
 - b. Baseplate: Encapsulated steel bottom plates with holes provided for anchoring to support structure.
 - 3. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.
- C. Restrained Elastomeric Isolation Mounts: .
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Description: All-directional isolator with seismic restraints containing two separate and opposing elastomeric elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.
 - a. Housing: Cast-ductile iron or welded steel.
 - b. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.

- D. Freestanding, Laterally Stable, Open-Spring Isolators:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 6. Baseplates: Factory-drilled steel plate for bolting to structure with an elastomeric isolator pad attached to the underside. Baseplates shall limit floor load to 500 psig.
 7. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.
- E. Freestanding, Laterally Stable, Open-Spring Isolators with Vertical-Limit Stop Restraint: .
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 2. Housing: Steel housing with vertical-limit stops to prevent spring extension due to weight being removed.
 - a. Base with holes for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig.
 - b. Top plate with threaded mounting holes.
 - c. Internal leveling bolt that acts as blocking during installation.
 3. Restraint: Limit stop as required for equipment and authorities having jurisdiction.
 4. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 5. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 6. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 7. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
- F. Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods: .
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 2. Frame: Steel, fabricated with a connection for an upper threaded hanger rod and an opening on the underside to allow for a maximum of 30 degrees of angular lower hanger rod misalignment without binding or reducing isolation efficiency.
 3. Dampening Element: Molded, oil-resistant rubber, neoprene, or other elastomeric material with a projecting bushing for the underside opening preventing steel-to-steel contact.
- G. Combination Coil-Spring and Elastomeric-Insert Hanger with Spring and Insert in Compression: .
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Kinetics Noise Control, Inc.

2. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
3. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
4. Minimum Additional Travel: 50 percent of the required deflection at rated load.
5. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
6. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
7. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
8. Self-centering hanger-rod cap to ensure concentricity between hanger rod and support spring coil.

2.03 Seismic-Restraint Devices

A. Restraint Channel Bracings

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. B-line, an Eaton business.
 - b. Hilti, Inc.
 - c. Mason Industries, Inc.
 - d. Unistrut; Part of Atkore International.
2. Description: MFMA-4, shop- or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; rated in tension, compression, and torsion forces.

B. Restraint Cables

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Gripple Inc.
 - b. Kinetics Noise Control, Inc.
 - c. Vibration & Seismic Technologies, LLC.
 - d. Vibration Mountings & Controls, Inc.
2. Restraint Cables: ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

C. Seismic-Restraint Accessories

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. B-line, an Eaton business.
 - b. Kinetics Noise Control, Inc.
 - c. Mason Industries, Inc.
 - d. TOLCO.
2. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchor bolts and studs.
3. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.

2.04 Mechanical Anchor Bolts

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. B-line, an Eaton business.
 2. Hilti, Inc.

3. Kinetics Noise Control, Inc.
 4. Mason Industries, Inc.
- B. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488. Minimum length of eight times

2.05 Performance Requirements

- A. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- B. Seismic-Restraint Loading:
1. Site Class as Defined in the IBC: D.
 2. Assigned Seismic Use Group or Building Category as Defined in the IBC: III.
 - a. Component Importance Factor: 1.5.
 - b. Component Response Modification Factor: 5.0.
 - c. Component Amplification Factor: 2.5.
 3. Rated strengths, features, and applications shall be as defined in reports by an agency acceptable to authorities having jurisdiction.
 - a. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic forces to which they are subjected.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Vibration and Seismic Controls for Plumbing Piping and Equipment in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Vibration-Control and Seismic-Restraint Device Installation

- A. Equipment Restraints:
1. Install resilient bolt isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inches.
 2. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction providing required submittals for component.
- B. Piping Restraints:
1. Comply with requirements in MSS SP-127.

- C. Install cables so they do not bend across edges of adjacent equipment or building structure.
- D. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction providing required submittals for component.
- E. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolt and mounting hole in concrete base.
- F. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- G. Drilled-in Anchors:
 - 1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
 - 2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
 - 3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened
 - 4. Set anchors to manufacturer's recommended torque, using a torque wrench.
 - 5. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

3.04 Field Quality Control

- A. Perform tests and inspections.
- B. Remove and replace malfunctioning units and retest as specified above.
- C. Prepare test and inspection reports.

3.05 Adjusting

- A. Adjust isolators after piping system is at operating weight.
- B. Adjust limit stops on restrained spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation
- C. Adjust active height of spring isolators
- D. Adjust restraints to permit free movement of equipment within normal mode of operation.

3.06 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the DISTRICT.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Plumbing Insulation as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Plumbing Insulation will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Plumbing Insulation to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Plumbing Insulation from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Plumbing Insulation that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Insulation Materials

- A. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process
- B. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.
- C. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type I. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
- D. Mineral-Fiber, Preformed Pipe Insulation
- E. Mineral-Fiber, Pipe and Tank Insulation: Mineral or glass fibers bonded with a thermosetting resin. Semirigid board material complying with ASTM C 1393, Type II or Type IIIA Category 2, or with properties similar to ASTM C 612, Type IB. Nominal density is 2.5 lb/cu. ft. or more. Thermal conductivity (k-value) at 100 deg F is 0.29 Btu x in./h x sq. ft. x deg F or less.
- F. Polyolefin: Unicellular, polyethylene thermal plastic insulation. Comply with ASTM C 534 or ASTM C 1427, Type I, Grade 1 for tubular materials and Type II, Grade 1 for sheet materials.

2.03 Adhesives

- A. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I
- B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
- C. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

2.04 Mastics

- A. Vapor-Barrier Mastic: Water based; suitable for indoor use

2.05 Sealants

- A. Joint Sealants for Cellular-Glass Products
 1. Compatible with Insulation materials
 2. Permanently flexible, elastomeric sealant
 3. Service temperature range: minus 100 to plus 300 degrees F
 4. Low VOC

2.06 Sealants

- A. Factory-applied jackets on various applications

1. White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. Self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

2.07 Tapes

- A. White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136
- B. Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Plumbing Insulation in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Pipe Insulation

- A. Install insulation continuously through walls and partitions.
- B. Flexible Elastomeric Insulation Installation:
 1. Seal longitudinal seams and end joints with adhesive to eliminate openings in insulation
 2. Install mitered sections of pipe insulation. Secure insulation and seal seams with adhesive
- C. Mineral Fiber Insulation
 1. Insulation on Straight Pipes and Tubes: Seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
 2. Insulation with factory-applied jackets, above ambient surfaces, secure laps with outward clinched staples
 3. Insulation with factory-applied jackets, below ambient surfaces, do not staple longitudinal tabs. Secure with adhesive as recommended by insulation manufacturer, seal with vapor-barrier mastic and flashing sealant.
- D. Polyolefin Insulation
 1. Seal split-tube longitudinal seams and end joints with adhesive
 2. Install mitered sections of polyolefin pipe insulation. Secure insulation and seal with adhesive
- E. Interior Piping System Applications:
 1. Domestic hot water

2. Recirculated domestic hot water
3. Exposed water supplies and sanitary drains of fixtures for people with disabilities.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

PART 1 GENERAL

1.02 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Domestic Water Piping as shown on the drawings and as specified herein.

1.03 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Domestic Water Piping will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver Domestic Water Piping to Project Site in protective wrapping with manufacturer's name, product brand name and type.
- B. Handle and protect Domestic Water Piping from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Domestic Water Piping that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Pipe Fittings

- A. Hard Copper Tubing: ASTM B 88, Types L and M, water tube, drawn temper with wrought copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 - 1. Copper Unions: Cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
 - 2. Joining Materials: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, leadfree-alloy solder.
- B. Soft Copper Tubing: ASTM B 88, Types K and L, water tube, annealed temper with copper pressure fittings, cast-copper-alloy or wrought-copper, solder-joint fittings. Furnish wrought copper fittings if indicated.
 - 1. Joining Materials: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, leadfree-alloy solder.
- C. Galvanized-Steel Piping: ASTM A 53/A 53M, Schedule 40, galvanized-steel pipe, with ASME B16.4, Class 125, galvanized, standard pattern gray-iron, threaded fittings.
- D. Flexible Connectors: Stainless-steel, corrugated-metal tubing with wire-braid covering. Working-pressure rating a minimum of 250 psig.

2.03 Performance

- A. Potable-water piping and components shall comply with NSF 14 and NSF 61. Plastic piping components shall be marked with "NSF-pw."

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install piping free of sags and bends.

- C. Install fittings for changes in direction and branch connections.
- D. Install unions at final connection to each piece of equipment.
- E. Install dielectric unions and flanges to connect piping materials of dissimilar metals in gas piping.
- F. Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water piping.
- G. Soldered Joints: Comply with procedures in ASTM B 828 unless otherwise indicated.
- H. Install shutoff valve, hose-end drain valve, strainer, pressure gage, and test tee with valve, inside the building at each domestic water service entrance. Comply with requirements in Section 221119 "Domestic Water Piping Specialties" for drain valves and strainers.
- I. Install domestic water piping without pitch for horizontal piping and plumb for vertical piping.
- J. Rough-in domestic water piping for water-meter installation according to utility company's requirements.
- K. Comply with requirements in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment" for pipe hanger and support devices.
 - 1. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:
 - a. NPS 1-1/4 and Smaller: 84 inches with 3/8-inch rod.
 - b. NPS 1-1/2: 108 inches with 3/8-inch rod.
 - c. NPS 2: 10 feet with 3/8-inch rod.
 - d. NPS 2-1/2: 11 feet with 1/2-inch rod.
 - e. Support vertical piping at each floor.
 - 2. Install vinyl-coated hangers for CPVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - a. NPS 1 and Smaller: 36 inches with 3/8-inch rod.
 - b. NPS 1-1/4 to NPS 2: 48 inches with 3/8-inch rod.
 - c. NPS 2-1/2 to NPS 3-1/2: 48 inches with 1/2-inch rod.
 - d. Install supports for vertical CPVC piping every 60 inches for NPS 1 and smaller, and every 72 inches for NPS 1-1/4 and larger.
 - 3. Install vinyl-coated hangers for PEX piping with the following maximum horizontal spacing and minimum rod diameters:
 - a. NPS 1 and Smaller: 32 inches with 3/8-inch rod.
 - b. Install hangers for vertical PEX piping every 48 inches.
 - 4. Install vinyl-coated hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - a. NPS 2 and Smaller: 48 inches with 3/8-inch rod.
 - b. NPS 2-1/2 to NPS 3-1/2: 48 inches with 1/2-inch rod.
 - c. Install supports for vertical PVC piping every 48 inches.
- L. Install flexible connectors in suction and discharge piping connections to each domestic water pump.

3.03 Inspecting and Cleaning

- A. Inspect and test piping systems as follows:
 - 1. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
 - 2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
- B. Clean and disinfect potable domestic water piping by filling system with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.

3.04 Piping

- A. Underground, Service Entrance Piping: Soft copper tubing.
- B. Aboveground Distribution Piping: Type L, hard copper tubing.

3.05 Valves

- A. Where specific valve types are not indicated, the following requirements apply:
 - 1. Shutoff Duty: Use bronze ball or gate valves for piping NPS 2 and smaller. Use cast-iron butterfly or gate valves with flanged ends for piping NPS 2-1/2 and larger.
 - 2. Throttling Duty: Use bronze ball or globe valves for piping NPS 2 and smaller. Use cast-iron butterfly valves with flanged ends for piping NPS 2-1/2 and larger.
 - 3. Hot-Water-Piping, Balancing Duty: Memory-stop balancing valves.
 - 4. Drain Duty: Hose-end drain valves.
- B. Install gate valves close to main on each branch and riser serving two or more plumbing fixtures or equipment connections and where indicated.
- C. Install gate or ball valves on inlet to each plumbing equipment item, on each supply to each plumbing fixture not having stops on supplies, and elsewhere as indicated.
- D. Install drain valve at base of each riser, at low points of horizontal runs, and where required to drain water distribution piping system.
- E. Install swing check valve on discharge side of each pump and elsewhere as indicated.
- F. Install ball valves in each hot-water circulating loop and discharge side of each pump.

3.06 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the DISTRICT.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Domestic Water Piping Specialties as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Domestic Water Piping Specialties will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Domestic Water Piping Specialties to Project Site in original protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Domestic Water Piping Specialties from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Domestic Water Piping Specialties that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.
- D. Potable-water piping and components shall comply with NSF 61 and NSF 14

2.02 Manufactured Units

- A. Reduced-Pressure-Principle Backflow Preventers:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ames Fire & Waterworks
 - b. Apollo Flow Controls Manufacturer
 - c. FEBCO
 - 2. Standard: ASSE 1013
 - 3. Operation: Continuous-pressure applications
 - 4. Pressure Loss: 12 psig maximum, through middle third of flow range
 - 5. Body: Bronze for NPS 2 and smaller; steel with interior lining that complies with AWWA C550 or that is FDA approved for NPS 2-1/2 and larger
 - 6. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger
 - 7. Configuration: Designed for horizontal, straight-through flow
 - 8. Accessories:
 - a. Valves NPS 2 and Smaller: Ball type with threaded ends on inlet and outlet
 - b. Valves NPS 2-1/2 and Larger: Outside-screw and yoke-gate type with flanged ends on inlet and outlet
 - c. Air-Gap Fitting: ASME A112.1.2, matching backflow-preventer connection
- B. Primary Thermostatic, Water Mixing Valves:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Acorn Engineering Company.
 - b. Apollo Flow Controls
 - c. Armstrong International, Inc.
 - 2. Standard: ASSE 1017
 - 3. Pressure Rating: 125 psig minimum unless otherwise indicated.
 - 4. Type: Exposed-mounted, thermostatically controlled, water mixing valve.
 - 5. Body: Bronze with corrosion-resistant interior components.
 - 6. Connections: Threaded inlets and outlet.
 - 7. Accessories: Manual temperature control, check stops on hot- and cold-water supplies, and adjustable, temperature-control handle.
 - 8. Tempered-Water Setting: 110 deg F
 - 9. Tempered-Water Design Flow Rate: 1 gpm
 - 10. Valve Finish: Chrome plated.
 - 11. Piping Finish: Copper.
- C. Hose Bibbs:
 - 1. Standard: ASME A112.18.1 for sediment faucets.
 - 2. Body: Bronze.
 - 3. Seat: Bronze, replaceable.

4. Supply Connections: NPS 1/2 or NPS 3/4 threaded or solder-joint inlet.
 5. Outlet Connection: Garden-hose thread complying with ASME B1.20.7.
 6. Pressure Rating: 125 psig.
 7. Vacuum Breaker: Integral nonremovable, drainable, hose-connection vacuum breaker complying with ASSE 1011.
 8. Finish for Finish for Service Areas: nickel plated.
 9. Finish for Finished Rooms: satin finish nickel.
 10. Operation for Service Areas: Operating key.
 11. Operation for Finished Rooms: Operating key.
 12. Include operating key with each operating-key hose bibb.
 13. Include integral wall flange with each chrome- or nickel-plated hose bibb.
- D. Water Hammer Arrestors:
1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. AMTROL, Inc.
 - b. Jay R. Smith Mfg. Co.
 - c. Josam Company
 2. Standard: ASSE 1010 or PDI-WH 201.
 3. Type: Metal bellows.
 4. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F.
- E. Supply-Type, Trap-Seal Primer Device:
1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Jay R. Smith Mfg. Co.
 - b. MIFAB, Inc.
 - c. Precision Plumbing Products
 2. Standard: ASSE 1018
 3. Body: Bronze
 4. Inlet and Outlet Connections: NPS 1/2 threaded, union, or solder joint.
 5. Gravity Drain Outlet Connection: NPS 1/2 threaded or solder joint.
 6. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install temperature-actuated, water mixing valves with check stops or shutoff valves on inlets and with shutoff valve on outlet.

- C. Install water-hammer arresters in water piping according to PDI-WH 201.
- D. Install supply-type, trap-seal primer valves with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.
- E. Install drainage-type, trap-seal primer valves as lavatory trap with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting.

3.03 Field Quality

- A. Perform the following tests:
 - 1. Test each pressure vacuum breaker, reduced-pressure-principle backflow preventer, according to authorities having jurisdiction and the device's reference standard
 - 2. Domestic water piping specialties will be considered defective if they do not pass tests and inspections.
 - 3. Prepare test and inspection reports.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Sanitary Waste Vent Piping as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Waste Vent Piping will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver, handle and protect Waste Vent Piping from physical damage. Store materials in a clean, protected location.
- B. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Waste Vent Piping that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Pipes and Fittings

- A. Copper Drainage Tube and Fittings: ASTM B 306, Type DWV drawn temper with ASME B16.23, cast copper or ASME B16.29, wrought copper, solder-joint fittings.
 - 1. Copper Flanges: ASME B16.24, Class 150, cast copper with solder-joint end.
 - a. Flange Gasket Materials: ASME B16.21, full-face, flat, nonmetallic, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - b. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
 - 2. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux.
- B. Hub-and-Spigot Cast-Iron Soil Pipe and Fittings: ASTM A 74, Service class; ASTM C 564 rubber gaskets.
- C. Hubless Cast-Iron Soil Pipe and Fittings: ASTM A 888 or CISPI 301.
- D. Cast-Iron, Hubless-Piping Couplings:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. MG Piping products Company
 - 2. Standard: ASTM C 1277
 - 3. Description: Two-piece ASTM A 48/A 48M, cast-iron housing; stainless-steel bolts and nuts; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- E. CISPI, Hubless-Piping Couplings:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. ANACO -Huskey
 - b. Dallas Specialty & Mfg. Co.
 - c. Fernco Inc.
 - 2. Standard: ASTM C 1277 and CISPI 310
 - 3. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- F. PVC Plastic, DWV Pipe and Fittings: ASTM D 2665, Schedule 40, plain ends with PVC socket-type, DWV pipe fittings.
 - 1. Adhesive Primer: ASTM F 656
 - a. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Solvent Cement: ASTM D 2564
 - a. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24)

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Waste Vent Piping in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
- D. Install wall penetration system at each pipe penetration through foundation wall. Make installation watertight.
- E. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- F. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- G. Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:
 - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
 - 2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow.
 - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward ventstack.
- H. Install PVC soil and waste drainage and vent piping according to ASTM D 2665
- I. Install underground PVC soil and waste drainage piping according to ASTM D 2321
- J. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- K. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure unless otherwise indicated

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District..

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Sanitary Waste Piping Specialties as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Sanitary Waste Piping Specialties will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Sanitary Waste Piping Specialties to Project Site in original protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Sanitary Waste Piping Specialties from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Sanitary Waste Piping Specialties that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Backwater Valves

- A. Horizontal, Cast -Iron Backwater Valve
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Jay R. Smith Mfg. Co
 - b. Josam Company
 - c. MIFAB, Inc.
 - 2. ASME A112.14.1, gray-iron body with bronze seat
 - 3. Extension: ASTM A 74, Service class; full-size, cast-iron, soil-pipe extension to field installed cleanout at floor; replaces backwater valve cover
- B. Horizontal, Plastic Backwater Valve
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Canplas LLC
 - b. IPS Corporation
 - c. NDS, Inc.
 - 2. Horizontal type; with PVC body, PVC removable cover, and PVC swing check valve.

2.03 Cleanouts

- A. Exposed Metal Cleanouts:
 - 1. ASME A112.36.2M, Cast-Iron Cleanouts
 - 2. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Jay R. Smith Mfg. Co
 - b. Josam Company
 - c. MIFAB, Inc o:
 - 3. Body Material: Hub-and-spigot, cast-iron soil pipe T-branch required to match connected piping.
 - 4. Closure: Countersunk, cast-iron plug
 - 5. Closure Plug Size: Same as or not more than one size smaller than cleanout size
- B. Cast Iron Wall Cleanouts:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Jay R. Smith Mfg. Co
 - b. Josam Company
 - c. MIFAB, Inc o:
 - 2. Standard: ASME A112.36.2M. Include wall access.
 - 3. Closure: Countersunk, drilled-and-threaded plug.
 - 4. Wall Access: Round, deep, chrome-plated bronze cover plate with screw.
 - 5. Wall Access: Round, nickel-bronze, copper-alloy, or stainless-steel wall-installation frame and cover.

2.04 Floor Drains

A. Cast -Iron Floor Drains:

1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Commercial Enameling Company
 - b. Jay R. Smith Mfg. Co.
 - c. Josam Company
2. Standard: ASME A112.6.3 with backwater valve
3. Pattern: Floor Drain
4. Body Material: Gray iron
5. Seepage Flange: Required
6. Clamping Device: Required.
7. Outlet: Bottom.
8. Backwater Valve: type Not required.
9. Coating on Interior and Exposed Exterior Surfaces: Acid-resistant enamel.
10. Sediment Bucket:
11. Top or Strainer Material: Nickel bronze.
12. Top of Body and Strainer Finish: Nickel bronze.
13. Top Shape: Round.
14. Funnel: Not required.
15. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet, and trap-seal primer valve connection.
16. Trap Material: Bronze.
17. Trap Pattern: Deep-seal P-trap.
18. Trap Features: Cleanout and trap-seal primer valve drain connection

2.05 Miscellaneous Sanitary Drainage Piping Specialties

- A. Air-Gap Fittings: ASME A112.1.2, chrome-plated brass cover. Insert drawing designation
- B. Vent Caps
 1. Description: Cast-iron body with threaded or hub inlet and vandal-proof design. Include vented hood and setscrews to secure to vent pipe.
 2. Size: Same as connected stack vent or vent stack

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Install backwater valves in building drain piping. For interior installation, provide cleanout deck plate flush with floor and centered over backwater valve cover, and of adequate size to remove valve cover for servicing.
- C. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers.
- D. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor unless otherwise indicated.
 - 1. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
 - 2. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
- E. Install roof flashing assemblies on sanitary stack vents and vent stacks that extend through roof.
- F. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.
- G. Install grease removal devices on floor. Install trap, vent, and flow-control fitting according to authorities having jurisdiction. Install control panel adjacent to unit, unless otherwise indicated.
- H. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain grease removal devices.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District..

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Facility Storm Drainage Piping as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building, that Facility Storm Drainage Piping is free of defects in material and factory workmanship. Defective materials shall be replaced at no additional cost to the District.
- B. Contractor shall guarantee, installation, for a period of one year, from date of acceptance of finished Building, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Facility Storm Drainage Piping to Project Site in protective wrapping with manufacturer's name, product brand name and type.
- B. Handle and protect Facility Storm Drainage Piping from physical damage. Store materials in a clean, protected location.
- C. Materials which are damaged or have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Facility Storm Drainage Piping that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.

- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Pipes and Fittings

- A. Copper Drainage Tube and Fittings: ASTM B 306, Type DWV drawn temper with ASME B16.23, cast-copper, solder-joint fittings.
 - 1. Copper Flanges: ASME B16.24, Class 150, cast copper with solder-joint end
 - a. Flange Gasket Materials: ASME B16.21, full-face, flat, nonmetallic, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - b. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
 - 2. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux
- B. Hub-and-Spigot Cast-Iron Soil Pipe and Fittings: ASTM A 74, Service class; ASTM C 564, rubber gaskets.
- C. Hubless Cast-Iron Soil Pipe and Fittings: ASTM A 888 or CISPI 301 with ASTM C 1277 and CISPI 310 shielded couplings.
- D. PVC Plastic, DWV Pipe and Fittings: ASTM D 2665, Schedule 40, with PVC socket type fittings made to ASTM D 3311, drain, waste, and vent patterns.
 - 1. Adhesive Primer: ASTM F 656.
 - a. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Solvent Cement: ASTM D 2564.
 - a. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.03 Performance

- A. Minimum Pressure Requirement for Storm Drainage: 10-foot head of water.
- B. Seismic Performance: Storm drainage piping and support and installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- C. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- D. Comply with NSF/ANSI 14, "Plastics Piping System Components and Related Materials," for plastic piping components.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Facility Storm Drainage Piping in accordance with manufacturer's written instructions and per accepted industry standards.
- C. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
- D. Install wall penetration system at each pipe penetration through foundation wall.
 - 1. Sleeves are not required for cast-iron soil piping passing through concrete slabs-on-grade if slab is without membrane waterproofing.
- E. Make changes in direction for storm drainage piping using appropriate branches, bends, and long-sweep bends. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- F. Lay buried building storm drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- G. Install storm drainage piping at the following minimum slopes unless otherwise indicated:
 - 1. Building Storm Drain: 1 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
 - 2. Horizontal Storm-Drainage Piping: 2 percent downward in direction of flow. G.
- H. Install underground PVC storm drainage piping according to ASTM D 2665.
- I. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- J. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

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PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Water Heaters General

- A. Insulation: Suitable for operating temperature and required insulating value. Include insulation material that surrounds entire tank except connections and controls
- B. Anode Rods: Factory installed, magnesium.
- C. Combination Temperature and Pressure Relief Valve: ASME rated and stamped and complying with ASME PTC 25.3. Include relieving capacity at least as great as heat input and pressure setting less than water heater working-pressure rating. Select relief valve with sensing element that extends into tank.
- D. Drain Valve: Factory or field installed.

2.03 Electric Water Heater

- A. Commercial, Electric Water Heater:
 - 1. *AO Smith*, ENS-40
- B. 40-gal. capacity, 4.5kW, 240v/1Ø, with ASME rated T&P relief valve.
- C. Provide PVC drip pan below Water Heater.

2.04 Performance

- A. Seismic Performance: Commercial domestic-water heaters shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- B. Comply with requirements of applicable NSF, AWWA, or FDA and EPA regulatory standards for tasteless and odorless, potable-water-tank linings.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install temperature and pressure relief valves and extend to closest floor drain.
- C. Install vacuum relief valves in cold-water-inlet piping.
- D. Install shutoff valves and unions at hot- and cold-water piping connections.
- E. Make piping connections with dielectric fittings where dissimilar piping materials are joined.
- F. Ground Electrical units

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Hangers and Supports for HVAC Piping and Equipment as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Hangers and Supports for HVAC Piping and Equipment will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Hangers and Supports for HVAC Piping and Equipment to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Hangers and Supports for HVAC Piping and Equipment from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Hangers and Supports for HVAC Piping and Equipment that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Hangers and Supports for HVAC

- A. Carbon-Steel Pipe Hangers and Supports:
 - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
 - 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
 - 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
 - 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
 - 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.
- B. Copper Pipe Hangers:
 - 1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components
 - 2. Hanger Rods: Continuous-thread rod, nuts, and washer made of copper-coated steel.
- C. Fastener System
 - 1. Verify suitability of fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick.
 - 2. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pullout, tension, and shear capacities appropriate for supported loads and building materials where used.
 - 3. Mechanical-Expansion Anchors: Insert-wedge-type, steel anchors, for use in hardened portland cement concrete; with pullout, tension, and shear capacities appropriate for supported loads and building materials where used.
- D. Miscellaneous Metals
 - 1. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
 - 2. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
 - a. Properties: Nonstaining, noncorrosive, and nongaseous.
 - b. Design Mix: 5000-psi, 28-day compressive strength.

2.03 Performance

- A. Hangers and Supports for Plumbing Piping Equipment
 - 1. Structural Performance: Hangers and supports shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
 - a. Design supports for multiple pipes capable of supporting combined weight of supported systems and system contents.
 - b. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
 - c. Design seismic-restraint hangers and supports for piping and equipment.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install piping free of sags and bends
- C. Install fittings for changes in direction and branch connections.

3.03 Hangers and Supports

- A. Comply with MSS SP-69 and MSS SP-89. Install building attachments within concrete or to structural steel.
- B. Install hangers and supports to allow controlled thermal and seismic movement of piping systems.
- C. Install powder-actuated fasteners and mechanical-expansion anchors in concrete after concrete is cured. Do not use in slabs less than 4 inches thick.
- D. Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
- E. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
 - 1. Adjustable Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated stationary pipes, NPS 1/2 to NPS 30.
 - 2. Pipe Hangers (MSS Type 5): For suspension of pipes, NPS 1/2 to NPS 4 to allow off-center closure for hanger installation before pipe erection.
 - 3. Adjustable Steel Band Hangers (MSS Type 7): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8.
 - 4. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8.
 - 5. Adjustable Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 2.
- F. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Specification Sections, install the following types:
 - 1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers, NPS 3/4 to NPS 20.
 - 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers, NPS 3/4 to NPS 20, if longer ends are required for riser clamps.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Vibration and Seismic Controls for HVAC Piping and Equipment as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Vibration and Seismic Controls for HVAC Piping and Equipment will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Vibration and Seismic Controls for HVAC Piping and Equipment to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Vibration and Seismic Controls for HVAC Piping and Equipment from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Vibration and Seismic Controls for HVAC Piping and Equipment that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Vibration isolators

- A. Elastomeric Isolation Pads:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Fabrication: Single or multiple layers of sufficient durometer stiffness for uniform loading over pad area.
 - 3. Size: Factory- or field-cut to match requirements of supported equipment.
 - 4. Pad Material: Oil and water resistant with elastomeric properties, infused, nonwoven cotton or synthetic fibers.
 - 5. Surface Pattern: Waffle pattern
 - 6. Load-bearing metal plates adhered to pads
- B. Double-Deflection, Elastomeric Isolation Mount:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Mounting Plates:
 - a. Top Plate: Encapsulated-steel, load-transfer top plates, factory drilled and threaded with threaded studs or bolts.
 - b. Baseplate: Encapsulated-steel bottom plates with holes provided for anchoring to support structure.
 - 3. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.
- C. Restrained Elastomeric Isolation Mounts:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Description: All-directional isolator with seismic restraints containing two separate and opposing elastomeric elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.
 - a. Housing: Cast-ductile iron or welded steel.
 - b. Elastomeric Material: Molded, oil-resistant rubber, neoprene, or other elastomeric material.
- D. Freestanding, Laterally Stable, Open-Spring Isolators:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Baseplates: Factory-drilled steel plate for bolting to structure with an elastomeric isolator pad attached to the underside. Baseplates shall limit floor load to 500 psig.
 - 3. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.

- E. Freestanding, Laterally Stable, Open-Spring Isolators with Vertical-Limit Stop Restraint: .
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - E. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Steel housing with vertical-limit stops to prevent spring extension due to weight being removed. Base with holes for bolting to structure with an elastomeric isolator pad attached to the underside. Bases shall limit floor load to 500 psig. Top plate with threaded mounting holes. Limit stop restraint as required for equipment and authorities having jurisdiction.
- F. Elastomeric Mount in a Steel Frame with Upper and Lower Steel Hanger Rods:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Steel fabricated with an upper threaded hanger rod and a maximum of 30 degrees of angular lower hanger-rod misalignment. Molded, oil-resistant rubber, neoprene, or other elastomeric material dampening element. Color-code or otherwise identify to indicate capacity range.
- G. Combination Coil-Spring and Elastomeric-Insert Hanger with Spring and Insert in Compression:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Ace Mountings Co., Inc.
 - b. California Dynamics Corporation.
 - c. Isolation Technology, Inc.
 - 2. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
 - 3. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 4. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 5. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 6. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 7. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
 - 8. Self-centering hanger rod cap to ensure concentricity between hanger rod and support spring coil.
- H. Pipe Riser Resilient Support: All-directional, acoustical pipe anchor consisting of two steel tubes separated by a minimum of 1/2-inch-thick neoprene. Include steel and neoprene vertical limit stops arranged to prevent vertical travel in both directions. Design support for a maximum load on the isolation material of 500 psigB-line and for equal resistance in all directions.

2.03 Seismic Restraint Devices

- A. General Requirements for Restraint Components: Rated strengths, features, and applications shall be as defined in reports by an agency acceptable to authorities having jurisdiction.
 - 1. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic forces to which they will be subjected.
- B. Channel Support System:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. B-line
 - b. Hilti, Inc.
 - c. Mason Industries, Inc.
 - 2. Description: MFMA-4, shop- or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end, and other matching components, and with corrosion-resistant coating; rated in tension, compression, and torsion forces

- C. Restraint Cables:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Kinetics Noise Control, Inc.
 - b. Vibration & Seismic Technologies, LLC
 - c. Vibration Mountings & Controls, Inc.
 - 2. Restraint Cables: ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service; with a minimum of two clamping bolts for cable engagement.

2.04 Seismic Restraint Accessories

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. B-line
 - 2. Kinetics Noise Control, Inc.
 - 3. Mason Industries, Inc.
- B. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchor bolts and studs.
- C. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.

2.05 Mechanical Anchor Bolts

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. B-line
 - 2. Hilti, Inc.
 - 3. Kinetics Noise Control, Inc.
- B. Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488. Minimum length of eight times diameter.

2.06 Performance

- A. Wind-Restraint Loading:
 - 1. Building Classification Category: III.
 - 2. Minimum 10 lb/sq. ft. multiplied by the maximum area of the HVAC component projected on a vertical plane that is normal to the wind direction and 45 degrees either side of normal.
- B. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- C. Seismic-Restraint Loading:
 - 1. Site Class as Defined in the IBC: D.
 - 2. Assigned Seismic Use Group or Building Category as Defined in the IBC: III.
 - a. Component Importance Factor: 1.5
 - b. Component Response Modification Factor: 5.0.
 - c. Component Amplification Factor: 2.5.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.

2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Vibration and Seismic Controls for HVAC Piping and Equipment in accordance with manufacturer's written instructions and per accepted industry standards.

3.03 Vibration Control and Seismic Restraint Device Installation

- A. Equipment Restraints
 1. Install resilient bolt isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch
 2. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction providing required submittals for component.
- B. Piping Restraints
 1. Comply with requirements in MSS SP-127.
- C. Install cables so they do not bend across edges of adjacent equipment or building structure.
- D. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolt and mounting hole in concrete base.
- E. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- F. Drilled-in Anchors:
 1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
 2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
 3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
 4. Set anchors to manufacturer's recommended torque, using a torque wrench.
 5. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

3.04 Adjusting

- A. Adjust isolators after piping system is at operating weight.
- B. Adjust limit stops on restrained spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation
- C. Adjust active height of spring isolators.

D. Adjust restraints to permit free movement of equipment within normal mode of operation.

3.05 Field Quality Control

A. Perform tests and inspections.

B. Remove and replace malfunctioning units and retest as specified above.

C. Prepare test and inspection reports.

3.06 Protection and Cleaning:

A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

- E. Examine systems for installed balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are accessible.
- F. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.
- G. Examine HVAC equipment and filters and verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- H. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible, and their controls are connected and functioning.
- I. Examine automatic temperature system components to verify the following:
 - 1. Dampers, valves, and other controlled devices are operated by the intended controller.
 - 2. Dampers and valves are in the position indicated by the controller.
 - 3. Integrity of dampers and valves for free and full operation and for tightness of fully closed and fully open positions. This includes dampers in multizone units, mixing boxes, and variable-air-volume terminals.
 - 4. Automatic modulating and shutoff valves, including two-way valves and three-way mixing and diverting valves, are properly connected.
 - 5. Thermostats and humidistats are located to avoid adverse effects of sunlight, drafts, and cold walls.
 - 6. Sensors are located to sense only the intended conditions.
 - 7. Sequence of operation for control modes is according to the Contract Documents.
 - 8. Controller set points are set at indicated values.
 - 9. Interlocked systems are operating.
 - 10. Changeover from heating to cooling mode occurs according to indicated values.

3.02 General Procedures for Testing and Balancing

- A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Total System Balance", or NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and in this Section.
- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish.
- C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- D. Take and report testing and balancing measurements in inch-pound (IP) units.

3.03 General Procedures for Balancing Air Systems:

- A. Prepare schematic diagrams of systems' "as-built" duct layouts.
- B. For variable-air-volume systems, develop a plan to simulate diversity.
- C. Determine the best locations in main and branch ducts for accurate duct airflow measurements.
- D. Verify that motor starters are equipped with properly sized thermal protection.
- E. Check for airflow blockages.
- F. Check condensate drains for proper connections and functioning.
- G. Check for proper sealing of air-handling unit components.

H. Check for proper sealing of air duct system.

3.04 General Procedures for Hydronic Systems:

- A. Prepare test reports with pertinent design data; number in sequence starting at pump to end of system. Check the sum of branch-circuit flows against approved pump flow rate
- B. Prepare schematic diagrams of systems' "as-built" piping layouts.
- C. Prepare hydronic systems for testing and balancing according to the following, in addition to the general preparation procedures specified above:
 - 1. Open all manual valves for maximum flow.
 - 2. Check liquid level in expansion tank.
 - 3. Check makeup-water-station pressure gage for adequate pressure for highest vent.
 - 4. Set system controls so automatic valves are wide open to heat exchangers.
 - 5. Check pump-motor load. If motor is overloaded, throttle main flow-balancing device so motor nameplate rating is not exceeded.

3.05 Tolerances:

- A. Set HVAC system airflow and water flow rates within the following tolerances:
 - 1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 10 percent.
 - 2. Air Outlets and Inlets: Plus or minus 10 percent.
 - 3. Heating-Water Flow Rate: Plus or minus 10 percent.
 - 4. Cooling-Water Flow Rate: Plus or minus 10 percent.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install HVAC Insulation as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the HVAC Insulation will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver HVAC Insulation to Project Site in original protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect HVAC Insulation from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace HVAC Insulation that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Insulation Materials

- A. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- B. Mineral-Fiber Board Insulation: Comply with ASTM C 612, Type IA or Type IB. For duct and plenum applications, provide insulation without factory-applied jacket.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. CertainTeed Corporation
 - b. Fibrex insulations Inc.
 - c. Johns Manville
- C. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Aeroflex USA, Inc.
 - b. Armacell, LLC
 - c. Foster Brand
 - 2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Childers Brand.
 - b. Eagle Bridges
 - c. Foster Brand
 - 2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- E. Vapor-Barrier Mastic: Water based; suitable for indoor and outdoor use on below ambient services.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Foster Brand.
 - b. Vimasco Companies
 - 2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
 - 3. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
- F. Factory-Applied Jackets: When factory-applied jackets are indicated, comply with the following:
 - 4. White, kraft-paper, fiberglass-reinforced scrim, aluminum-foil backing; ASTM C 1136, Type I.
 - 5. Aluminum-foil, fiberglass-reinforced scrim, kraft-paper backing; ASTM C 1136, Type II.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install insulation continuously through walls and partitions.
- C. Flexible Elastomeric Insulation Installation:
 - 1. Seal longitudinal seams and end joints with adhesive to eliminate openings in insulation
 - 2. Install mitered sections of pipe insulation. Secure insulation materials and seal seams with adhesive to eliminate openings
- D. Mineral-Fiber Insulation Installation:
 - 1. Insulation Installation on Straight Pipes and Tubes
 - 2. For insulation with factory-applied jackets on above ambient surfaces, secure laps with outward clinched staples
 - 3. For insulation with factory-applied jackets on below ambient surfaces, do not staple longitudinal tabs but secure tabs with additional adhesive
 - 4. Blanket and Board Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
 - 5. For ducts and plenums with surface temperatures below ambient, install a continuous, unbroken vapor barrier.
- E. Plenums and Ducts Requiring Insulation:
 - 1. Concealed and exposed supply and outdoor air.
 - 2. Concealed and exposed return air located in nonconditioned space.
 - 3. Concealed and exposed exhaust between isolation damper and penetration of building exterior.
- F. Plenums and Ducts Not Insulated:
 - 1. Metal ducts with duct liner.
 - 2. Factory-insulated plenums and casings.
 - 3. Flexible connectors.
 - 4. Vibration-control devices.
 - 5. Factory-insulated access panels and doors.
- G. Piping Not Insulated: Unless otherwise indicated, do not install insulation on the following:
 - 1. Drainage piping located in crawlspaces.
 - 2. Underground piping.
 - 3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install HVAC Ducts and Casings as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE):
- B. American Society for Testing and Materials (ASTM) International:
- C. The Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

1.04 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the HVAC Ducts and Casings will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.06 Delivery, Storage, and Handling

- A. Deliver HVAC Ducts and Casings to Project Site in protective wrapping with manufacturer's name, product brand name and type.
- B. Handle and protect HVAC Ducts and Casings from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at the installer's expense.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace HVAC Ducts and Casings that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Ducts

- A. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip galvanized coating:
 - 1. Galvanized Coating Designation: G90.
 - 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
- B. Carbon-Steel Sheets: ASTM A 1008/A 1008M; with oiled, matte finish for exposed ducts.
- C. Stainless Steel: ASTM A 480/A 480M, Type 316, with a No. 2D finish for concealed ducts and No. 4 finish for exposed ducts.
- D. Fibrous-Glass Duct Board: Comply with UL 181, Class 1, 1-inch-thick, fibrous glass with fire-resistant, reinforced foil-scrim-kraft barrier, and having the air-side surface treated to prevent erosion.
- E. Joint and Seam Tape, and Sealant: Comply with UL 181A.
- F. Rectangular Metal Duct Fabrication: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- G. Fibrous-Glass Duct Fabrication: Comply with SMACNA's "Fibrous Glass Duct Construction Standard."
- H. Fibrous-Glass Liner: Comply with NFPA 90A or NFPA 90B and with NAIMA AH124.
 - 1. Thickness: 1 inch.
 - 2. Airstream surface coated with an antimicrobial erosion-resistant coating.
 - 3. Liner Adhesive: Comply with NFPA 90A or NFPA 90B and with ASTM C 916.
 - 4. Mechanical Fasteners: Galvanized steel suitable for adhesive attachment, mechanical attachment, or welding attachment.

2.03 Accessories

- A. Volume Dampers and Control Dampers: Single-blade and multiple opposed-blade dampers, standard leakage rating, and suitable for horizontal or vertical applications; factory fabricated and complete with required hardware and accessories.

- B. Fire Dampers: Rated and labeled according to UL 555 by an NRTL; factory fabricated and complete with required hardware and accessories
- C. Ceiling Fire Dampers: Labeled according to UL 555C by an NRTL and complying with construction details for tested floor- and roof-ceiling assemblies as indicated in UL's "Fire Resistance Directory." Provide factory-fabricated units complete with required hardware and accessories.
- D. Smoke Dampers: Labeled according to UL 555S by an NRTL. Combination fire and smoke dampers shall also be rated and labeled according to UL 555. Provide factory-fabricated units complete with required hardware and accessories.
- E. Flexible Connectors: Flame-retarded or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.
- F. Flexible Ducts: Spiral-wound steel spring with flameproof vinyl sheathing complying with UL 181, Class 1.

2.04 Performance Requirements

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- B. Structural Performance: Duct hangers and supports and seismic restraints shall withstand the effects of gravity and seismic loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and ASCE/SEI 7.
- C. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
- D. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."
- E. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."
- F. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems" and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- G. Comply with NFPA 96 for ducts connected to commercial kitchen hoods.
- H. Comply with UL 181 for ducts and closures.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Seal ducts to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
 - 1. Outdoor, Supply-Air Ducts: Seal Class A.
 - 2. Outdoor, Exhaust Ducts: Seal Class C.
 - 3. Outdoor, Return-Air Ducts: Seal Class C.
 - 4. Unconditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class B.
 - 5. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class A.
 - 6. Unconditioned Space, Exhaust Ducts: Seal Class C.
 - 7. Unconditioned Space, Return-Air Ducts: Seal Class B.
 - 8. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class C.
 - 9. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher than 2-Inch wg: Seal Class B.
 - 10. Conditioned Space, Exhaust Ducts: Seal Class B.
 - 11. Conditioned Space, Return-Air Ducts: Seal Class C. C. Conceal ducts from view in finished and occupied spaces.
- D. Avoid passing through electrical equipment spaces and enclosures.
- E. Support ducts to comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Ch. 4, "Hangers and Supports."
- F. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.
- G. Install volume and control dampers in lined duct with methods to avoid damage to liner and erosion of duct liner.
- H. Install fire and smoke dampers according to UL listing.
- I. Install fusible links in fire dampers.
- J. Clean new duct system(s) before testing, adjusting, and balancing.

3.03 Testing, Adjusting, and Balancing

- A. Balance airflow within distribution systems, including submains, branches, and terminals, to indicated quantities.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Diffusers, Registers, and Grilles as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Diffusers, Registers, and Grilles will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Diffusers, Registers, and Grilles to Project Site in protective wrapping with manufacturer's name, product brand name and type.
- B. Handle and protect Diffusers, Registers, and Grilles from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Diffusers, Registers, and Grilles that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Diffusers

- A. Rectangular and Square Ceiling Diffusers:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Krueger
 - b. Price Industries
 - c. Titus
 - 2. Material: Steel
 - 3. Finish: Baked Enamel, color to be selected
 - 4. Mounting: Refer to plans for required mounting type.

2.03 Registers and Grilles

- A. Louvered Face Grilles:
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Krueger
 - b. Price Industries
 - c. Titus
 - 2. Material: Steel
 - 3. Finish: Baked Enamel, color to be selected
 - 4. Mounting: Refer to plans for required mounting type.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- A. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- B. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Drawings indicate general arrangement of ducts, fittings, and accessories. For units installed in lay-in ceiling panels, locate units in the center of panel. Where architectural features or other items conflict with installation, notify Architect for a determination on location.

- C. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed, before starting air balancing.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Low -Voltage Electrical Power Connectors and Cables as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Low -Voltage Electrical Power Connectors and Cables will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Low -Voltage Electrical Power Connectors and Cables to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Low -Voltage Electrical Power Connectors and Cables from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Low -Voltage Electrical Power Connectors and Cables that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Copper Building Wire

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. General Cable Technologies Corporation
 - 2. Okonite Company
 - 3. Southwire Company
- C. Conductors: Copper, complying with ASTM B 3 for bare annealed copper and with ASTM B 8 for stranded conductors.
- D. Conductor Insulation:
 - 1. Type NM: Comply with UL 83 and UL 719.
 - 2. Type RHH and Type RHW-2: Comply with UL 44.
 - 3. Type USE-2 and Type SE: Comply with UL 854.
 - 4. Type TC-ER: Comply with NEMA WC 70/ICEA S-95-658 and UL 1277.
 - 5. Type THHN and Type THWN-2: Comply with UL 83.
 - 5. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
 - 7. Type UF: Comply with UL 83 and UL 493.
 - 8. Type XHHW-2: Comply with UL 44.

2.03 Aluminum Building Wire

- A. Description: Flexible, insulated and uninsulated, drawn aluminum current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. General Cable Technologies Corporation
 - 2. Okonite Company
 - 3. Southwire Company
- C. Conductors: Aluminum, complying with ASTM B 800 and ASTM B 801.
- D. Conductor Insulation:
 - 1. Type NM: Comply with UL 83 and UL 719.
 - 2. Type RHH and Type RHW-2: Comply with UL 44.
 - 3. Type USE-2 and Type SE: Comply with UL 854.
 - 4. Type TC-ER: Comply with NEMA WC 70/ICEA S-95-658 and UL 1277.
 - 5. Type THHN and Type THWN-2: Comply with UL 83.
 - 5. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
 - 7. Type XHHW-2: Comply with UL 44.

2.04 Connectors and Splices

- A. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
- B. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Hubble Power Systems, Inc.
 - 2. ILSCO
 - 3. Thomas & Betts Corporation

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- A. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- B. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Complete raceway installation between conductor and cable termination points, prior to pulling conductors and cables.
- C. Complete cable tray systems installation prior to installing conductors and cables.
- D. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.
- E. Conceal cables in finished walls, ceilings, and floors. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours
- F. Use pulling means, that will not damage cables or raceway. Use manufacturer-approved pulling compound or lubricant where necessary.
- G. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- H. Make splices, terminations, and taps that are compatible with conductor material. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors. Install conductor at each outlet, with at least 6 inches of slack.

3.03 Field Quality Control

- A. Contractor will engage a qualified testing agency to perform tests and inspections with the assistance of a factory-authorized service representative.
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors and conductors feeding all critical equipment and services for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters. Cables will be considered defective if they do not pass tests and inspections.

- B. Test and Inspection Reports: Prepare a written report showing procedures used, results complying with requirements, and corrective action taken to achieve compliance.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Grounding and Bonding for Electrical Systems as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Grounding and Bonding for Electrical Systems will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Grounding and Bonding for Electrical Systems to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Grounding and Bonding for Electrical Systems from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Grounding and Bonding for Electrical Systems that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Manufacturers

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. ERICO International Corporation
 - 2. ILSCO
 - 3. O-Z/Gedney
 - 4. Thomas & Betts Corporation

2.03 Grounding Materials

- A. Conductors: Solid for No. 8 AWG and smaller; stranded for No. 6 AWG and larger
 - 1. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable code or authorities having jurisdiction.
 - 2. Bare, Solid-Copper Conductors: Comply with ASTM B 3.
 - 3. Bare, Stranded-Copper Conductors: Comply with ASTM B 8.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.04 Performance Requirements

- A. Ground Rods: Copper-clad steel, sectional type; 3/4 inch by 10 feet.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with UL 467 for grounding and bonding materials and equipment

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Pipe and Equipment Grounding-Conductor Terminations: Bolted.
- C. Underground Connections: Welded.
- D. Connections to Structural Steel: Bolted.
- E. Install grounding conductors routed along shortest and straightest paths possible unless otherwise indicated or required by code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- F. Install ground rods driven into ground until tops are 2 inches below final grade unless otherwise indicated.
- G. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape.
- H. Make connections without exposing steel or damaging coating if any.
- I. Install bonding straps and jumpers in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
- J. Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
- K. Bond to equipment mounted on vibration isolation hangers and supports so vibration is not transmitted to rigidly mounted equipment.
- L. Grounding and Bonding for Piping:
 1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding-conductor conduit or sleeve to conductor at each end.
 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- M. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.
 1. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 2. Perform tests by fall-of-potential method according to IEEE 81.
 3. Report measured ground resistances that exceed 10 ohms.
 4. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Hangers and Supports for Electrical Systems as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Hangers and Supports for Electrical Systems will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Hangers and Supports for Electrical Systems to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Hangers and Supports for Electrical Systems from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Hangers and Supports for Electrical Systems that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Support, Anchorage and Attachment Components

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. ERICO International Corporation
 - b. Thomas & Betts Corporation
 - c. Unistrut
- B. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with $\frac{9}{16}$ -inch diameter holes at a maximum of 8 -inches, on center, in at least one surface.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Allied Tube & Conduit
 - b. B-Line, an Eaton Business
 - c. Seasafe, Inc.
- C. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- D. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings.
- E. Mounting, Anchoring, and Attachment Components:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - i. Hilti, Inc.
 - ii. MKT Fastening, LLC
 - iii. Simpson Strong-Tie Co., Inc.
 - 2. Mechanical-Expansion Anchors: Insert-wedge type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - i. B-Line, an Eaton Business
 - ii. Hilti, Inc.
 - ii. MKT Fastening, LLC
 - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.03 Performance

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
 1. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents. The rated strength of supports are to be adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.
- B. Comply with NFPA 70 (NEC)

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- C. Separate dissimilar metals and metal products from contact with wood or cementitious materials by painting each metal surface in area of contact with a bituminous coating or by other permanent separation.
- D. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- E. Multiple Raceways or Cables: Install on trapeze-type supports fabricated with steel slotted channel.
- F. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- G. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. To Steel: Welded, threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts, Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69, Spring-tension clamps
6. To Light Steel: Sheet metal screws.
7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount on slotted-channel racks attached to substrate.

H. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 Concrete Bases

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit, so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Anchor equipment to concrete base.
 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Raceways and Boxes for Electrical Systems as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Raceways and Boxes for Electrical Systems will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Raceways and Boxes for Electrical Systems to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Raceways and Boxes for Electrical Systems from physical damage. Store materials in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed, legally disposed of, and replaced at the installer's expense.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Raceways and Boxes for Electrical Systems that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Metal Conduits and Fittings

- A. Product Manufacturers that may be incorporated into the Work include, but not limited to:
 - 1. Allied Tube & Conduit
 - 2. Republic Conduit
 - 3. Wheatland Tube Company
- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Galvanized Rigid Conduit (GRC): Comply with ANSI C80.1 and UL 6.
- D. Intermediate Metal Conduit (IMC): Comply with ANSI C80.6 and UL 1242.
- E. Electrical Metallic Tubing (EMT): Comply with ANSI C80.3 and UL 797.
- F. Flexible Metal Conduit (FMC): Comply with UL 1; zinc-coated steel.
- G. Liquidtight Flexible Metal Conduit (LFMC): Flexible steel conduit with PVC jacket, complying with UL 360.
- H. Raceway Fittings: Specifically designed for raceway type used in Project.

2.03 Non -Metallic Conduits and Fittings

- A. Product Manufacturers that may be incorporated into the Work include, but not limited to:
 - 1. CANTEX, Inc.
 - 2. RACO
 - 3. Thomas & Betts Corporation
- B. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Electrical Nonmetallic Tubing (ENT): Comply with NEMA TC 13 and UL 1653.
- D. Rigid Nonmetallic Conduit (RNC): Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated
- E. Raceway Fittings: Specifically designed for raceway type used in Project.

2.04 Metal Wireways and Auxiliary Gutters

- A. Product Manufacturers that may be incorporated into the Work include, but not limited to:
 - 1. B-Line
 - 2. Hoffman
 - 3. Square D

- B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1, Type 3R, Type 4, Type 12 unless otherwise indicated, and sized according to NFPA 70.
 - 1. Fittings: Specifically designed for raceway type used in Project.
 - 2. Covers: Screw-cover type unless otherwise indicated.
 - 3. Finish: Manufacturer's standard enamel finish.

2.05 Boxes, Enclosures, and Cabinets

- A. Product Manufacturers that may be incorporated into the Work include, but not limited to:
 - 1. Hoffman
 - 2. RACO
 - 3. Thomas & Betts
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Metal Floor Boxes:
 - 1. Material: Cast metal.
 - 2. Type: Fully adjustable.
 - 3. Shape: Rectangular.
 - 4. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.06 Handholes and Boxes for Exterior Underground Wiring

- A. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
 - 1. Product Manufacturers that may be incorporated into the Work include, but not limited to:
 - a. Armorcast Products Company
 - b. New Basis
 - c. Quazite: Hubbell Power Systems, Inc.
 - 2. Standard: Comply with SCTE 77.
 - 3. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
 - 4. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural-load rating consistent with enclosure and handhole location.
 - 5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 - 6. Cover Legend: Molded lettering, "ELECTRIC."

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Outdoor Raceways Applications:
 - 1. Exposed or Concealed: GRC.
 - 2. Underground, Single Run: RNC.
 - 3. Connection to Vibrating Equipment: LFMC.
 - 4. Boxes and Enclosures: Metallic, NEMA 250, Type 3R or Type 4.
- C. Indoor Raceways Applications:
 - 1. Exposed or Concealed: EMT.
 - 2. Underslab: RNC.
 - 3. Connection to Vibrating Equipment: FMC; in wet or damp locations, use LFMC.
 - 4. Damp or Wet Locations: IMC.
 - 5. Boxes and Enclosures: Metallic, NEMA 250, Type 1, unless otherwise indicated.
- D. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.
- E. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.
 - 1. Install raceways embedded in slabs in middle third of slab thickness where practical, and leave at least 1-inch thick concrete cover.
 - 2. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
 - 3. Space raceways laterally to prevent voids in concrete.
 - 4. Install conduit larger than 1-inch trade size, parallel to or at right angles to main reinforcement. Where conduit is at right angles to reinforcement, place conduit close to slab support.
 - 5. Transition from RNC to Schedule 80 GRC before rising above floor.
- F. Raceways Embedded in Slabs:
 - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
 - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
- G. Install pull wires in empty raceways.
- H. Connect motors and equipment subject to vibration, noise transmission, or movement with a 72-inch maximum length of flexible conduit.
- I. Install raceways and cables concealed within finished walls, ceilings, and floors unless otherwise indicated.
- J. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.
- K. Installation of Hangers and Supports:
 - 1. Comply with NECA 1 and NECA 101 for installation requirements, except as specified
 - 2. Separate dissimilar metals and metal products from contact with wood or cementitious materials by painting each metal surface in area of contact with a bituminous coating or by other permanent separation.
 - 3. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.
 - 4. Multiple Raceways or Cables: Install on trapeze-type supports fabricated with steel slotted channel.
 - 5. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lbs.

6. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods, unless otherwise indicated or required by Code:
 - a. To Wood: Fasten with lag screws or through bolts.
 - b. To New Concrete: Bolt to concrete inserts.
 - c. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - d. To Existing Concrete: Expansion anchor fasteners.
 - e. To Steel: Welded, threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts, Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69, Spring-tension clamps.
 - f. To Light Steel: Sheet metal screws.
 - g. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount on slotted-channel racks attached to substrate.
7. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 Sleeve and Sleeve -Seal Installations for Electrical Penetrations

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

Furnish all labor, equipment, materials, and incidentals required, and install Sleeves and Sleeve Seals for Electrical Raceways and Cabling as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Contractor Submittal

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Sleeves and Sleeve Seals for Electrical Raceways and Cabling will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Sleeves and Sleeve Seals for Electrical Raceways and Cabling to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Sleeves and Sleeve Seals for Electrical Raceways and Cabling from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Sleeves and Sleeve Seals for Electrical Raceways and Cabling that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Sleeves

- A. Wall Sleeves
 - 1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
 - 2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral water stop unless otherwise indicated.
- B. Sleeves for Rectangular Openings: Galvanized sheet steel.

2.03 Sleeve -Seal System

- A. Modular sealing device, designed for field assembly, fills annular space between sleeve and raceway or cable.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Advanced Products & Systems, Inc.
 - b. Pipeline Seal and Insulator, Inc.
 - c. Proco Products
 - 2. Sealing Elements: Ethylene-propylene-diene monomer rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
 - 3. Pressure Plates: Carbon steel.
 - 4. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

2.04 Grout

- A. Shrink-resistant; ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout; noncorrosive, nonstaining.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Sleeve and Sleeve Seal Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Comply with National Electrical Contractors Association (NECA) 1.
- C. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
- D. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.
- E. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
 - 1. Cut sleeves to length for mounting flush with both wall surfaces.
 - 2. Extend sleeves installed in floors 2 inches above finished floor level.
- F. Interior Penetrations of Non-fire-rated Walls and Floors: Seal annular space between sleeve and cable using joint sealant appropriate for size, depth, and location of joint according to Section 079200 "Joint Sealants."
- G. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.
- H. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- I. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch annular clear space between cable and sleeve for installing mechanical sleeve seals.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Lighting Control Devices as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Lighting Control Devices will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Lighting Control Devices to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Lighting Control Devices from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Lighting Control Devices that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Time Switches

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Cooper Industries
 - 2. Intermatic, Inc.
 - 3. NSi Industries, LLC
- B. Electronic Time Switches: Solid state, programmable, with alphanumeric display; complying with UL 917.
 - 1. Contact Configuration: SPST, DPST, SPDT, DPDT.
 - 2. Contact Rating: 30-A inductive or resistive, 240 V ac.
 - 3. Circuitry: Allow connection of a photoelectric relay as substitute for on-off function of a program.
 - 4. Eight-Day Program: Uniquely programmable for each weekday and holiday.
 - 5. Skip-a-day mode

2.03 Outdoor Photoelectric Switches

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Cooper Industries
 - 2. Intermatic, Inc.
 - 3. NSi Industries, LLC
- B. Solid state, with SPST dry contacts rated for 1000-W incandescent or 1800-VA inductive, to operate connected relay, contactor coils, and microprocessor input; complying with UL 773A, and compatible with ballasts and LED lamps.
 - 1. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range.
 - 2. Time Delay: 15-second minimum.
 - 3. Surge Protection: Metal oxide varistor.

2.04 Daylight -Harvesting Switching Controls

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Leviton Manufacturing Co., Inc.
 - 2. Lithonia Lighting
 - 3. WattStopper
- B. Indoor, Ceiling-Mounted Photoelectric Switch: Solid-state, light-level sensor unit complying with UL 773A, with separate relay unit rated for 20-A ballast or LED load at 120 and 277 V ac. Cadmium sulfide photoresistors are not acceptable.
 - 1. Switch Rating: Dry contacts rated for 20-A ballast or LED load at 120 and 277 V ac, for 13-A tungsten at 120 V ac, and for 1 hp at 120 V ac.

2. Light-Level Monitoring Range: 10 to 200 fc, with an adjustment for turn-on and turn-off levels within that range.
3. Time Delay: Adjustable from 5 to 300 seconds.
4. Set-Point Adjustment: With deadband adjustment of 25, 50, and 75 percent above the "on" set point, or provide with separate adjustable "on" and "off" set points.
5. Indicator: Two LEDs.

2.05 Switchbox Mounted occupancy Sensors

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 1. Leviton Manufacturing Co., Inc.
 2. Lithonia Lighting
 3. WattStopper
- B. Automatic-wall-switch occupancy sensor, suitable for mounting in a single gang switchbox.
 1. Type: Passive infrared and Dual technology (passive infrared and ultrasonic).
 2. Voltage: 120/277 V.
 3. Switch Rating: Not less than 800-VA ballast or LED load at 120 V, 1200-VA ballast or LED load at 277 V, and 800-W incandescent.
 4. Time Delay: Adjustable up to 30 minutes.
 5. Field of View: 180 degrees.
 6. Minimum Coverage Area: 900 sq. ft.

2.06 Outdoor Motion Sensors

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 1. Leviton Manufacturing Co., Inc.
 2. RAB Lighting
 3. WattStopper
- B. Solid-state outdoor motion sensors.
 1. Type: Passive infrared.
 2. Switch Rating:
 - a. Luminaire-Mounted Sensor: 1000-W incandescent, 500-VA fluorescent/LED.
 - b. Separately Mounted Sensor: Dry contacts rated for 20-A ballast or LED load at 120 and 277 V ac, for 13-A tungsten at 120 V ac, and for 1 hp at 120 V ac.
 3. Voltage: 120/277 V
 4. Time Delay: Adjustable up to 12 minutes.
 5. Detection Coverage: 180-degree field of view and 50-foot detection range.

2.07 Lighting Contactors

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 1. Eaton
 2. General Electric Company
 3. Square D
- B. Electrically operated and electrically held, combination type with fusible switch, complying with NEMA ICS 2 and UL 508.

2.08 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install and aim sensors in locations to achieve at least 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.
- C. Install field-mounting transient voltage suppressors for lighting control devices in Category A locations that do not have integral line-voltage surge protection
- D. Label time switches and contactors with a unique designation.
- E. Verify actuation of each sensor and adjust time delays.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Low-Voltage Transformers as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data
- B. Seismic Qualification Certificates: For transformers, accessories, and components, from manufacturer.

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Low-Voltage Transformers will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Low-Voltage Transformers to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect section elements from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Low-Voltage Transformers that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Distribution Transformers

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. General Electric Company
 - 3. Square D; by Schneider Electric
- B. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service. Electrical components, devices, and accessories to be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Enclosure: Ventilated, NEMA 250, Type 2, Type 3R.
- D. Coils: Continuous windings without splices except for taps.
 - 1. Internal Coil Connections: Brazed or pressure type.
 - 2. Coil Material: Copper.
 - 3. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.
- E. Taps:
 - 1. Transformers 3 kVA and Smaller: None.
 - 2. Transformers 7.5 to 24 kVA: One 5 percent tap above and one 5 percent tap below normal full capacity.
 - 3. Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
- F. Transformers that are K-factor rated will comply with UL 1561 requirements for nonsinusoidal load current-handling capability to the degree defined by designated K-factor.
 - 1. Unit shall meet requirements of NEMA TP 1 when tested according to NEMA TP 2 with a K-factor equal to one.

2.03 Performance

- A. Seismic Performance: Transformers constructed to withstand seismic forces specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- B. Comply with NFPA 70 and UL 1561.
- C. Transformers Rated 15 kVA and Larger: Comply with NEMA TP 1 energy-efficiency levels as verified by testing according to NEMA TP 2.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.

- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Fasten transformers securely in place, with provisions for thermal and structural movement. Install with concealed fasteners unless otherwise indicated.
- C. Separate dissimilar metals and metal products from contact with wood or cementitious materials by painting each metal surface in area of contact with a bituminous coating or by other permanent separation.
- D. Install wall-mounting transformers level and plumb with wall brackets fabricated by transformer manufacturer.
 - 1. Brace wall-mounted transformers as specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- E. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Panelboards as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Panelboards will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Panelboards to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Panelboards from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Panelboards that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 General Requirements

- A. Enclosures: Flush- and surface-mounted cabinets; NEMA 250, Type 1 for indoor use, Type 4 for other wet or damp indoor locations and Type 3R for outdoor use
- B. Service Equipment Label: Nationally Recognized Testing Laboratory (NRTL) labeled for use as service equipment for panelboards with one or more main service disconnecting and overcurrent protective devices.
- C. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- D. Panelboard Short-Circuit Current Rating: Rated for series-connected system with integral or remote upstream overcurrent protective devices and labeled by an NRTL. Include size and type of allowable upstream and branch devices; listed and labeled for series-connected short-circuit rating by an NRTL.
- E. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.03 Distribution Panelboards

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. Siemens Industry, Inc.
 - 3. Square D; by Schneider Electric
- B. Panelboards: NEMA PB 1, distribution type.
- C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
- D. Mains: Circuit breaker.
- E. Branch Overcurrent Protective Devices: Bolt-on circuit breakers.

2.04 Lighting and Appliance Branch -Circuit Panelboards

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. Siemens Industry, Inc.
 - 3. Square D; by Schneider Electric
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike..
- D. Mains: Circuit breaker.

- E. Branch Overcurrent Protective Devices: Bolt-on circuit breakers.

2.05 Disconnecting and Overcurrent Protective Devices

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. Siemens Industry, Inc.
 - 3. Square D; by Schneider Electric
- B. Molded-Case Circuit Breaker: Comply with UL 489, with series-connected rating or interrupting capacity to meet available fault currents.
 - 1. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits
 - 2. Ground-Fault Circuit-Interrupter Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip)
- C. Fused Switch: NEMA KS 1, Type HID; clips to accommodate specified fuses; lockable handle.

2.06 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA PB 1.
- C. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Receive, inspect, handle, store, and install panelboards and accessories according to NEMA PB 1.1.
- C. Mount top of trim 90 inches above finished floor unless otherwise indicated.
- D. Arrange conductors into groups; bundle and wrap with wire ties.
- E. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Wiring Devices as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Wiring Devices will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Wiring Devices to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Wiring Devices from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Wiring Devices that fail due to materials or production workmanship within the specified warranty period, at no cost to the buildingowner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Commercial Grade Devices

- A. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
 - 1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 - 2. Devices shall comply with the requirements in this Section.
- B. Device Color: As selected by Architect unless otherwise indicated or required by NFPA 70 or device listing
- C. Duplex Convenience Receptacles: 125 V, 20 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, and UL 498
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Hubbell Incorporated
 - b. Leviton Manufacturing Co., Inc.
 - c. Pass & Seymour/Legrand
- D. Duplex Ground-Fault Circuit-Interrupter (GFCI) Convenience Receptacles: 125-V, 20-A, straight blade, non-feed-through type. NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Hubbell Incorporated
 - b. Leviton Manufacturing Co., Inc.
 - c. Pass & Seymour/Legrand
- E. Single Pole Toggle Switches: 120/277 V, 20 A. Comply with NEMA WD 1 and UL 20.
 - 1. Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Hubbell Incorporated
 - b. Leviton Manufacturing Co., Inc.
 - c. Pass & Seymour/Legrand
- F. Pilot-Light Switches, Single Pole: 120/277 V, 20 A, with LED lighted handle, illuminated when switch is off.
 - 1. Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Hubbell Incorporated
 - b. Leviton Manufacturing Co., Inc.
 - c. Pass & Seymour/Legrand
- G. Key-Operated Switches: 120/277 V, 20 A; single pole, with factory-supplied key in lieu of switch handle
 - 1. Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Hubbell Incorporated
 - b. Leviton Manufacturing Co., Inc.
 - c. Pass & Seymour/Legrand

2.03 Wall Plates

- A. Wall Plates, Finished Areas: Smooth, high-impact thermoplastic, fastened with metal screws having heads matching plate color.
- B. Wall Plates, Unfinished Areas: Galvanized steel with metal screws.
- C. Wall Plates, Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet locations.

2.04 Floor Service Fittings

- A. Modular, flush-type, dual-service units suitable for wiring method used.
- B. Compartments: Barrier separates power from voice and data communication cabling
- C. Service Plate: Rectangular or Round, die-cast aluminum or solid brass with satin finish.
- D. Power Receptacle: NEMA WD 6, Configuration 5-20R, gray finish, unless otherwise indicated.
- E. Data Communication Outlet: Blank cover with bushed cable opening.

2.05 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application
- B. Comply with NFPA 70.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- C. Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
- D. Mount devices flush, with long dimension vertical, and grounding terminal of receptacles on top unless otherwise indicated. Group adjacent devices under single, multi-gang wall plates.

3.03 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, materials, and incidentals required, and install Fuses as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Fuses will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Fuses to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Fuses from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Fuses that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Cartridge Fuses

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Bussman
 - 2. Littelfuse, Inc.
 - 3. Mersen USA
- B. Characteristics: NEMA FU 1, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.

2.03 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application
- B. Comply with NEMA FU 1 for cartridge fuses.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Fuse Application

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Service Entrance: Class L, time delay or Class J, time delay.
- C. Feeders: Class L, fast acting or Class J, fast acting.
- D. Motor Branch Circuits: Class RK1, time delay
- E. Other Branch Circuits: Class J, fast acting.
- F. Control Transformer Circuits: Class CC, time delay, control-transformer duty.

3.03 Installation

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.

- B. Install fuses so rating information is readable without removing fuse.
- C. Install labels indicating fuse replacement information on inside door of each fused switch and adjacent to each fuse block and holder
- D. Install spare-fuse cabinet(s).

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

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PART 1 GENERAL

1.01 Scope of Work

- A. Furnish all labor, equipment, tools, materials, and incidentals required, and install Enclosed Switches and Circuit Breakers as shown on the drawings and as specified herein.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Submittals

Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.

- A. Product Data

1.04 Quality Assurance

- A. Manufacturer shall guarantee for a period of one year, from the date of acceptance of the finished Building for occupancy, that the Enclosed Switches and Circuit Breakers will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.

1.05 Delivery, Storage, and Handling

- A. Deliver Enclosed Switches and Circuit Breakers to Project Site in protective wrapping labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Enclosed Switches and Circuit Breakers from physical damage. Store in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.06 Warranty

- A. Warranty covers all work specified in this section, for a period of one year.
- B. Manufacturer shall replace Enclosed Switches and Circuit Breakers that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for one (1) year, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Fusible and Non -Fusible Switches

- A. Fusible Switches, 600 A and Smaller: UL 98 and NEMA KS 1, Type HD, that accommodate specified fuses, and with lockable handle interlocked with cover in closed position.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Eaton
 - b. Siemens Industry, Inc.
 - c. Square D
 - 2. Single or Double throw.
 - 3. Three or six poles.
 - 4. 240 or 600-Vac.
 - 5. 600 A and smaller.
 - 6. UL 98 and NEMA KS 1, horsepower rated.
- B. Non -Fusible Switches, 600 A and Smaller: UL 98 and NEMA KS 1, Type GD or Type HD, with lockable handle interlocked with cover in closed position.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Eaton
 - b. Siemens Industry, Inc.
 - c. Square D
 - 2. Single or Double throw.
 - 3. Three or six poles.
 - 4. 240 or 600-Vac.
 - 5. 600 A and smaller.
 - 6. UL 98 and NEMA KS 1, horsepower rated.

2.03 Molded -Case Circuit Breakers

- A. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. Siemens Industry, Inc.
 - 3. Square D
- B. Comply with UL 489 and NEMA AB 3, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
 - 2. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with field-adjustable instantaneous trip settings.
 - 3. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller and let-through ratings less than NEMA FU 1, RK-5.
 - 4. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity.

- C. Features and Accessories:
 - 1. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
 - 2. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.

2.04 Enclosures

- A. UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
 - 1. Outdoor Locations: NEMA 250, Type 3R.
 - 2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
 - 3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4

2.05 Support and Anchorage Components

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly, and provide finish suitable for the environment in which installed.
 - 1. Channel Dimensions: Selected for structural loading and applicable seismic forces.
- B. Raceway and Cable Supports: As described in NECA 1.
- C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and fittings.
- D. Mounting, Anchoring, and Attachment Components:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete.
 - 3. Concrete Inserts: Steel or malleable-iron, slotted-support-system units similar to MSS Type 18; complying with MFMA-3 or MSS SP-58.
 - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
 - 5. Through Bolts: Structural type, hex head, high strength; complying with ASTM A 325.
 - 6. Toggle Bolts: All-steel springhead type.
 - 7. Hanger Rods: Threaded steel.
 - 8. Bushings for Floor-Mounted Equipment Anchors: Neoprene units designed for seismically rated rigid equipment mountings and matched to type and size of anchor bolts and studs used.
 - 9. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for seismically rated rigid equipment mountings and matched to type and size of attachment devices used.

2.06 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Comply with NECA 1.
- C. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- D. Install electrical equipment to allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
- E. Install electrical equipment to provide for ease of disconnecting the equipment with minimum interference to other installations.
- F. Install electrical equipment to allow right of way for piping and conduit installed at required slope.
- G. Install electrical equipment to ensure that connecting raceways, cables, wireways, cable trays, and busways are clear of obstructions and of the working and access space of other equipment.
- H. Install required supporting devices in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- I. Install fuses in fusible devices.

3.03 Field Quality Control

- A. Perform the following field tests and inspections, and prepare test reports:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State and Local requirements.

2.02 Controllers and Accessories

- A. Full-Voltage Controllers: Comply with NEMA ICS 2, general purpose, Class A.
- B. Motor-Starting Switches: "Quick-make, quick-break" toggle or push-button action; marked to show whether unit is off, on, or tripped.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Eaton
 - b. Siemens Industry, Inc.
 - c. Square D
- C. Fractional Horsepower Manual Controllers: "Quick-make, quick-break" toggle or push-button action; marked to show whether unit is off, on, or tripped.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Eaton
 - b. Siemens Industry, Inc.
 - c. Square D
 - 2. Overload Relays: Inverse-time-current characteristics; NEMA ICS 2, and external reset push button.
 - 3. Pilot Light
- D. Integral Horsepower Manual Controllers (IHPMC): "Quick-make, quick-break" toggle or push-button action; marked to show whether unit is off, on, or tripped.
 - 1. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - a. Eaton
 - b. Siemens Industry, Inc.
 - c. Square D
 - 2. Overload Relays: Inverse-time-current characteristics; NEMA ICS 2 and external reset push button.

2.03 Enclosed Full -Voltage Magnetic Motor Controllers

- A. Across-the-line start, electrically held, for nominal system voltage of 600-V ac and less.
- B. Product Manufacturers that may be incorporated into the Work include, but are not limited to:
 - 1. Eaton
 - 2. Siemens Industry, Inc.
 - 3. Square D
- C. Overload Relays: Thermal or Solid state.
- D. Enclosures: NEMA ICS 6, Type 1 unless otherwise indicated.
 - 1. Outdoor Locations: Type 3R.

2.04 Support and Anchorage Components

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly, and provide finish suitable for the environment in which installed.
 - 1. Channel Dimensions: Selected for structural loading and applicable seismic forces.
- B. Mounting, Anchoring, and Attachment Components:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete.
 - 3. Concrete Inserts: Steel or malleable-iron, slotted-support-system units similar to MSS Type 18; complying with MFMA-3 or MSS SP-58.
 - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
 - 5. Through Bolts: Structural type, hex head, high strength; complying with ASTM A 325.
 - 6. Toggle Bolts: All-steel springhead type.
 - 7. Hanger Rods: Threaded steel.
 - 8. Bushings for Floor-Mounted Equipment Anchors: Neoprene units designed for seismically rated rigid equipment mountings and matched to type and size of anchor bolts and studs used.
 - 9. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for seismically rated rigid equipment mountings and matched to type and size of attachment devices used

2.05 Performance

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install electrical equipment to allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
- C. Install electrical equipment to provide for ease of disconnecting the equipment with minimum interference to other installations
- D. Install electrical equipment to allow right of way for piping and conduit installed at required slope
- E. Install electrical equipment to ensure that connecting raceways, cables, wireways, cable trays, and busways are clear of obstructions and of the working and access space of other equipment.
- F. Install required supporting devices in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- G. Comply with NECA 1.

3.03 Enclosed Controller installation

- A. Select features of each enclosed controller to coordinate with ratings and characteristics of supply circuit and motor; required control sequence; duty cycle of motor, controller, and load; and configuration of pilot device and control circuit affecting controller functions
- B. For control equipment at walls, bolt units to wall or mount on lightweight structural-steel channels bolted to wall. For controllers not at walls, provide freestanding racks complying with specification requirements.
- C. Connect selector switches to bypass only the manual and automatic control devices that have no safety functions when switch is in the hand position
- D. Connect selector switches with motor-control circuit in both hand and automatic positions for safety-type control devices, such as low- and high-pressure cutouts, high-temperature cutouts, and motor overload protectors.
- E. Set field-adjustable switches and circuit-breaker trip ranges.

3.04 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION

PART 1 GENERAL

1.01 Scope of Work

- A. Provide specialized Engineering, Design, Procurement, Installation, and other related services necessary to design, configure, procure, and install a complete and operable non-residential, Pedestal, or Pole Mounted, Dual Port, Level 2 Electric Vehicle Charging Station (EVCS), where indicated on the drawings and as specified herein.
- B. Provide, and apply, specialized knowledge, expertise, experience, and Engineering associated with Electric Vehicle Charging Equipment (EVCE) to ensure compliance of selected EVCE with applicable Municipal, County, and State standards, ordinances, regulations and statutes, necessary to process, and obtain required Permits and approval for the installation of Two (2) Electric Vehicle Charging Stations (EVCS), as shown on the drawings and specified herein.
- C. Engineering services associated with the design, permitting, and installation of the EVCS, shall be performed by a Licensed Engineer, Registered in the State of California.
- D. Construction and installation of the ECVS shall be performed, and Supervised, by experienced personnel, authorized and/or certified by the EVCE Manufacturer and possess requisite authorization and/or certification that is mandated, or recommended, by the Authorities Having Jurisdiction (AHJ).
- E. Furnish all Engineering, labor, tools, equipment, materials, and incidentals required to design and install Two (2), Permitted, compliant, and operational Electric Vehicle Charging Stations as shown and specified.

1.02 Related Work

- A. Drawings specifically referenced, or not, General and Supplementary Conditions of the Contract, and Division 01, General Requirements, in the Specifications shall apply.
- B. Specifications in all Divisions of the Project Manual are mutually applicable.

1.03 Standards

Where reference is made to one of the following standards, the revision in effect at the time of bid opening shall apply, unless otherwise noted.

- A. American National Standards Institute (ANSI)
- B. American Society of Mechanical Engineers (ASME)
- C. American Society for Testing and Materials (ASTM) International
- D. Factory Mutual Approvals (FM)
- E. National Fire Protection Association (NFPA)
- F. SAE International
- G. Underwriters Laboratories (UL)

1.04 Submittals

- A. Contractor is directed to submittal procedures stipulated in Section 01 33 00 Submittal Procedures.
- B. Provide copy of Permit Approval, required inspections, written description of approval process.
- B. Product Data
 - 1. Rated capacity, electrical characteristics, required input, breaker, metering accuracy, grid protection, safety characteristics, cutoff, separation, and protection.
 - 2. Delivery output, operating ranges, connections, Charging cable, and connector.
 - 3. Connectivity, communication, reporting, reader, controls, and display.
 - 4. Unit construction, housing materials, critical dimensions, mounting,
- C. Shop Drawings
 - 1. Equipment assembly, components, mounting and installation.
 - 2. Equipment critical dimensions, required clearances, Plan (footprint), Section, Elevations.
 - 3. Site Plan showing field dimensions with required clearances and maintenance of disabled access route clearances, per 2022 CBC T24, Part2, Vol 1, Chap.11B.

1.05 Quality Assurance

- A. Installer Qualifications: Authorized installer with Manufacturer's Training and/or Certification Document.
- B. Electrical Components, Devices, and Accessories UL Listed and Labeled.
- C. Comply with UL 2231-1. UL 2231-2, UL 2594, and NEC Article 625.
- D. Comply with SAE J1772.

1.06 Delivery, Storage, and Handling

- A. Deliver Electric Vehicle Charging Equipment, components, and accessories to Project Site in original protective casing and packing labeled with manufacturer's name, product brand name and type.
- B. Handle, protect, and store EVCE, components, and accessories from physical damage. Store in a clean, dry, and protected location.
- C. Any components which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.07 Warranty

- A. Warranty Electric Vehicle Charging Equipment (EVCE), components, and accessories, including manufacturing, workmanship, installation, and construction, for an extended period of Five (5) years from the date of Substantial Completion.
- B. Manufacturer's standard Warranty shall replace EVCE components that fail due to materials or production workmanship within the specified warranty period, at no cost to the District.

PART 2 PRODUCTS

2.01 Manufacturers

- A. Tellus Power, Inc.
- B. Charge Point, Inc.
- C. BTC Power, Inc.

2.02 Performance Requirements

- A. Design and Installation Approval: Acceptable to Authorities Having Jurisdiction
- B. Input Power: Two- 40 amp, 208/240 volt, on dedicated Branch circuit
- C. Output Current: 30A continuous x2
- D. Withstand Surge: 6kV at 3000A

2.03 Material and Finish

- A. Housing: NEMA 4 enclosure
- B. Material: Marine Grade Aluminum
- C. Finish: Powder coated, color to be selected, with positive separation between dissimilar metals
- D. Pedestal or Pole mounting

PART 3 EXECUTION

3.01 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the designated installation area is secure, clear, and free of obstructions or other interferences that would preclude installation.
 - 2. Verify that the designated station locations, elevations, dimensions, adjacent construction, and finished sitework is as required to receive the installation, without impacting adjacent use and function.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.

3.02 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install section elements in accordance with manufacturer's written instructions, per accepted industry standards, and in compliance with applicable Codes, Regulations, Ordinances and Statutes enforced by the Authorities Having Jurisdiction.
- C. Install all EVCE within area designated.
- D. Install all components in compliance with their respective industry standard.
- E. Mount all components of the ECVE above the Design Flood Elevation (DFE).

3.03 Field Quality Control

- A. Provide experienced Supervisor, authorized and/or certified by the EVCE Manufacturer and possess requisite authorization and/or certification.
- B. Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

3.04 Tests and Inspection

- A. Perform the following for each EVCE
 1. Unit self-test
 2. Operation test with Load Bank
 3. Operation test with EV
- B. EVCE shall be considered defective if it does not pass tests and inspections.

3.05 Certification and Approval

- A. Obtain all necessary and required approvals and permits from Authorities Having Jurisdiction (AHJ) prior to commencing work.
- B. Provide a copy of all approval documents to Architect and to the District. Include a list of required inspections and a written description of the final approval process.
- C. Ensure that the installation and connections are in compliance with applicable Codes, Regulations, Ordinances and Statutes enforced by the Authorities Having Jurisdiction.
- D. Ensure that required tests and inspections are completed and documented.
- E. Pay for, and obtain, all final reviews, approvals, Certifications, authorization for use, and licenses, stamps, and seals.

3.06 Start-up

- A. Assemble and deliver test documentation to Owner in format specified by District.
- B. Complete installation and start check/validation in accordance with Manufacturer's written instructions.
- C. Provide District with Maintenance and Operation Manual,
- D. Demonstrate use and provide Staff critical operation and end-task procedures.

3.07 Protection and Cleaning

- A. Clean installed Equipment and Accessories to be free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the District.

END OF SECTION

- E. Shop Drawings:
 - 1. Including scaled system configuration, materials, mounting details, wiring, connections, electrical ratings, and accessories required for a complete and operational installation.
- F. Operations and Maintenance Manual

1.05 Quality Assurance

- A. Manufacturer shall guarantee for a period of five (5) years, from the date of acceptance of the finished Building for occupancy, that the Solar Energy Electrical Power Generation System will be free of defects in materials and factory workmanship, and that defective materials will be repaired or replaced immediately, after proper notification.
- B. Contractor shall guarantee, the installation, for a period of one year, from the date of acceptance of the finished Building for occupancy, against faulty workmanship and damages attributable to the installation.
- C. Manufacturer shall have a, verifiable, minimum of five (5) year's-experience in the fabrication and installation of, commercial grade, Solar Energy Electrical Power Generation Systems.

1.06 Delivery, Storage, and Handling

- A. Deliver Solar Energy Electrical Power Generation System components to Project Site in original protective wrapping with seals unbroken. All packages and containers shall be labeled with manufacturer's name, product brand name and type.
- B. Handle and protect Solar Energy Electrical Power Generation System components from physical damage. Store materials in their original undamaged protective wrapping in a clean, protected location.
- C. Any materials which are damaged or found to have defects shall be removed and replaced at no expense to the District.

1.07 Warranty

- A. Warranty covers all work specified in this section, for a period of five (5) years.
- B. Manufacturer shall replace Solar Energy Electrical Power Generation System components that fail due to materials or production workmanship within the specified warranty period, at no cost to the building owner.
- C. Manufacturer's warranty shall commence on date of written acceptance of completed installation and shall extend for five (5) years, from that date.

PART 2 PRODUCTS

2.01 General

- A. The use of manufacturers or Product name, model, or catalog number is to establish the standard of quality and general configuration desired.
- B. Where practical, procure materials from a single manufacturer to provide for standardization of appearance, maintenance, and manufacturer's service.
- C. Materials shall comply with this Section and applicable State or Local requirements.

2.02 Components

- A. Photovoltaic Modules
- B. Rack and Support Assemblies
- C. Inverter
- D. Switchgear and Panels
- E. Combiner Boxes
- F. Storage Modules
- G. AC and DC Disconnects
- H. Instrumentation
- I. Monitoring Systems
- J. Wiring, Conduit and Raceways

2.03 Performance

- A. Solar Energy Electrical Power Generation System, shall provide a minimum of Five (5) Watts of Photovoltaic Panel Systems for every, net, Square Foot of new Building Floor Area as shown on the drawings.
- B. Confirm with Electric Utility Company serving the project site, whether the Solar Energy Electrical Power Generation System can, or should, be connected to the utility grid.
- C. Capability of the roof structure to meet imposed vertical, lateral (*seismic*), and wind uplift loads shall not be exceeded, by addition of the completed and installed Solar Energy Electrical Power Generation System.
- D. Installation of the Solar Energy Electrical Power Generation System shall not impact the terms of the Roof Warranty or preclude the Roofing System from being warranted, as specified.

PART 3 EXECUTION

3.01 Utility Coordination

- A. If stipulated by the Electric Utility Company, serving the project site, that the Solar Energy Electrical Power Generation System should, be connected to the utility grid; the Contractor shall coordinate with the District and the Electric Utility Company to establish an Interconnection Agreement.

3.02 Examination/ Preparation

- A. Prior to installation, examine work site conditions, adjacent surfaces, and materials.
 - 1. Establish that the bearing surfaces are secure, clean and free from any damage that would preclude installation.
 - 2. Verify that locations, elevations, and dimensions are as indicated on the drawings, and ready to receive the installation.
- B. Notify the Architect, of specific conditions found that need to be corrected prior to commencing installation.
- C. Do not begin installation until unsatisfactory conditions have been rectified.

3.03 Installation, General

- A. Commencing installation, specified in this section, constitutes acceptance of existing conditions and assumption of responsibility for satisfactory performance.
- B. Install Solar Energy Electrical Power Generation System components in accordance with manufacturer's written instructions, in strict compliance with applicable codes and standards and per accepted industry standards.
- C. Connect the Solar Energy Electrical Power Generation System to the electric utility grid only after receiving prior approval from the utility company and an interconnection Agreement being established.
- D. Only qualified personnel, authorized by the Electric Utility, shall connect the Solar Energy Electrical Power Generation System to the serving electric utility grid.

3.04 Instruction

- A. Provide a complete set of operating instructions, for the Solar Energy Electrical Power Generation System, near the equipment and at the base of the roof access ladder.
 - 1. Instructions shall be laminated or mounted under acrylic glass and installed in a frame.
- B. Contractor shall provide the services of a factory-trained technician for a comprehensive training session to instruct District personnel in the maintenance and operation of the Solar Energy Electrical Power Generation System.

3.05 Protection and Cleaning:

- A. Clean installed materials, products and surfaces free of dirt, dust and deleterious materials. Protect installation throughout the balance of construction activities. Upon completion of all construction activities, remove all temporary protection and arrange for final inspection. Repair any damage found, at no cost to the owner.

END OF SECTION