PROJECT MANUAL

Downey Unified
SCHOOL DISTRICT

Bid No. 23/24-33
Sussman Middle School Food Service Renovation March 14, 2024

DOCUMENT 00 01 10

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END OF DOCUMENT

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LIST OF DRAWINGS, TABLES AND SCHEDULES

DRAWINGS
N/A

WORK HOURS
Monday through Friday – 3:30 PM to 11:30 PM
Saturday – 7 AM to 4 PM

END OF DOCUMENT

NOTICE TO BIDDERS / INVITATION TO BID

1. Notice is hereby given that the governing board ("Board") of the **Downey Unified School District** ("District") will receive sealed bids to construct the following project:

   Bid No. 23/24-33: Sussman Middle School Food Service Renovation ("Project" or "Contract") located at locations below:

   Sussman Middle School, 12500 Birchdale Ave., Downey, CA 90242

2. Contractors must submit sealed bids on or before 10 AM on April 12, 2024 at the District Office Facilities Department, located at T-4, 11627 Brookshire Ave., Downey, CA 90241 at or after which time the District will open the bids and publicly read them aloud. Any claim by a Bidder of error in its bid must be made in compliance with Public Contract Code § 5100, et seq. Any bid that is submitted after this time shall be non-responsive and returned to the Bidder. The District is not responsible for Bids that are received after the deadline noted above.

3. The Project consists of:
   DEMOLITION OF EXISTING AND INSTALLATION OF NEW EXTERIOR CONCRETE SLAB MOUNTED WALK-IN REFRIGERATOR AND FREEZER UNITS AT THE SAME LOCATION WITH REUSE OF THE EXISTING UTILITIES.
   RENOVATION OF ONE EXISTING SINGLE ACCOMMODATION TOILET ROOM TO PROVIDE ACCESSIBLE FACILITIES WITHIN THE FOOD SERVICE AREA.
   INSTALLATION OF ONE NEW ACCESSIBLE DRINKING FOUNTAIN

4. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.

5. All questions about the meaning or intent of the Contract Documents are to be directed in writing to the District no later than Monday, April 1, 2024 at 4 PM. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6. To bid on this Project, the Bidder is required to possess one or more of the following State of California Contractor Licenses: B

   The Bidder's license(s) must be active and in good standing at the time of the bid opening and must remain so throughout the term of the Contract.

7. As security for its Bid, each Bidder shall provide with its Bid form
   - a bid bond issued by an admitted surety insurer on the form provided by the District,
   - cash, or
   - a cashier's check or a certified check, drawn to the order of the **Downey Unified School District**

   in the amount of ten percent (10%) of the total bid price. This bid security shall be a guarantee that the Bidder shall, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.

8. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the contract for the Project.

9. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of Public Contract Code § 22300.

10. The successful Bidder and its subcontractors shall pay all workers on the Project not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined

by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to Labor Code § 1770 et seq. Prevailing wage rates are on file with the District and are available to any interested party on request or at **www.dir.ca.gov/oprl/statistics_and_databases.html**. Bidders and Bidders' subcontractors shall comply with the registration and qualification requirements pursuant to Labor Code §§ 1725.5 & 1771.1

11. A mandatory pre-bid conference and site visit will be held on March 26, 2024, starting at 10:00 AM at Sussman Middle School, 12500 Birchdale Ave., Downey, CA 90241. All prospective Bidders are required to sign in at each school site. The Site Visit is expected to take approximately an hour. Failure to attend or tardiness will render bid ineligible.

12. Contract Documents are available on or after March 14, 2024.

13. The District's Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful Bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no Bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

14. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible Bidder based on: The base bid amount only.

END OF DOCUMENT

DOCUMENT 00 21 13

INSTRUCTIONS TO BIDDERS

Bidders shall follow the instructions in this document, and shall submit all documents, forms, and information required for consideration of a Bid.

Downey Unified School District ("District") will evaluate information submitted by the apparent low Bidder and, if incomplete or unsatisfactory to District, Bidder's bid may be rejected at the sole discretion of District.

1. **Project.** Bids are requested for a general construction contract, or work described in general, for the following project:

   Sussman Food Service Renovation ("Project" or "Contract")

2. **Submittal of Bids.** District will receive sealed Bids from Bidders as indicated in the Invitation to Bid and each Bidder shall ensure that its Bid contains all documents as required herein and is submitted by date and time shown in the Invitation to Bid.

   a. Contractors must ensure the District receives its bid, sealed and marked with name and address of the Bidder, the Project name and number, the bid number and bid package (if applicable), and the date for opening bids.

3. **Bid Opening.** Bids will be opened at or after the time indicated for receipt of bids.

4. **Complete Bids.** Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any Bid as non-responsive as a result of any error or omission in the Bid. Each Bidder must complete and submit all of the following documents as its Bid:

   - Bid Form
   - Bid Bond or other security
   - Designated Subcontractors List
   - Noncollusion Declaration
   - Iran Contracting Act Certification

   a. **Bid Form.** Bidders must submit Bids on the Bid Form and all other required District forms. Bids not submitted on the District's required forms shall be deemed non-responsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible. Bidders shall not modify the Bid Form or qualify their Bids. Bidders shall not submit scanned, re-typed, word-processed, or otherwise recreated versions of the Bid Form or other District-provided documents.

   b. **Bid Bond or Other Security.** Bidders must submit their Bid Form with cash, a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of their base Bid amount, including all additive alternates. Required form of corporate surety, Bid Bond, is provided by District and must be used and fully completed by Bidders choosing to provide a Bid Bond as security. The Surety on Bidders' Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed non-responsive and will not be considered.

   c. **Designated Subcontractors List.** Bidders must submit with the Bid the Designated Subcontractors List for

those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of the Bidder's total Bid. Failure to fully complete and submit this list when required by law shall result in Bid being deemed non-responsive and the Bid will not be considered.

d. **Noncollusion Declaration.** Bidders shall submit the Noncollusion Declaration with their Bids. Bids submitted without the Noncollusion Declaration shall be deemed non-responsive and will not be considered.

e. **Iran Contracting Act Certification.** Bidders shall submit the Iran Contracting Act Certification with their Bids. Bids submitted without the Iran Contracting Act Certification shall be deemed non-responsive and will not be considered.

5. **Erasures.** Bids shall be clearly written without erasure or deletions. District reserves the right to reject any Bid containing erasures or deletions.

6. **Prevailing Wages.** Pursuant to sections 1770 et seq. of the California Labor Code, Bidder and all Subcontractors under the Bidder shall pay all workers on all work performed pursuant to the Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the State of California Department of Industrial Relations (DIR) for the type of work performed and the locality in which the work is to be performed within the boundaries of the District. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by the DIR are on file with the District and are available to any interested party on request or at **www.dir.ca.gov/oprl/statistics_and_databases.html**.

7. **Contractor Registration.** Bidder shall ensure that it and its Subcontractors comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner, and are registered pursuant to Labor Code section 1725.5. Bidder and its subcontractors shall comply with Labor Code section 1725.5 to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of the Contract.

8. **Bidder Diligence.** Submission of Bid signifies careful examination of the Contract Documents and a complete understanding of the nature, extent, and location of Work to be performed. Bidders must complete the tasks listed below as a condition to bidding, and submission of Bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:

   a. Bidder has visited the Project Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;

   b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Price, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions. Bidder has notified the District if it contends that it requires additional examinations, investigations, explorations, tests, reports, studies, or similar information or data prior to submitting its bid;

c. Bidder has correlated its knowledge and the results of all observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;

d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution thereof by the District is acceptable to Bidder;

e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;

f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by the Instructions to Bidders and that Bidder represented in its Bid Form and the Agreement that it performed prior to bidding. Bidder is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work "incidental" to completion of the Work.

g. **Conditions Shown on the Contract Documents**: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. However, District only warrants, and Bidder may only rely, on the accuracy of limited types of information.

   (1) As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that this information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make that verification as a condition to bidding. In submitting its Bid, Bidder shall rely on the results of its own independent investigation. In submitting its Bid, Bidder shall not rely on District-supplied information regarding above-ground conditions or as-built conditions.

   (2) As to any subsurface condition shown or indicated in the Contract Documents, Bidder may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. District is not responsible for the completeness of this information for bidding or construction; nor is District responsible in any way for any conclusions or opinions of Bidder drawn from that information; nor is District responsible for subsurface conditions that are not specifically shown if those subsurface conditions are reasonably determinable by above-ground conditions and observation or as-built conditions (e.g., subsurface soil conditions in areas contiguous to areas where an above-ground condition is shown; utility pipes between a manhole and a water source, etc.).

h. **Conditions Shown in Reports and Drawings Supplied for Informational Purposes**: Reference is made to the document entitled Existing Information and Documentation Regarding Project Site, for identification of:

   (1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Project Site that have been utilized by Architect in preparing the Contract Documents; and

   (2) Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Project Site that has been utilized by Architect in preparing the Contract Documents.

(3) These reports and drawings are **not** Contract Documents and, except for any "technical" data regarding subsurface conditions specifically identified in Existing Information and Documentation Regarding Project Site, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings.

9. **As-Builts.** Bidders may examine any available "as-built" drawings of previous work by giving District reasonable advance notice. District will not be responsible for accuracy of "as-built" drawings. The document entitled Existing Information and Documentation Regarding Project Site applies to all supplied "as-built" drawings.

10. **Questions.** All questions about the meaning or intent of the Contract Documents are to be directed in writing to the District no later than Monday, April 1, 2024 at 4 PM. Interpretations or clarifications considered necessary by the District in response to those questions will be issued in writing by Addenda faxed, mailed, or delivered to all parties recorded by the District as having received the Contract Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

11. **Addenda.** Addenda may also be issued to modify parts of the Contract Documents as deemed advisable by the District. Bidder must acknowledge each Addendum in its Bid Form by number or its Bid may be considered non-responsive. Each Addenda shall be part of the Contract Documents. A complete listing of Addenda may be obtained from the District.

12. **Substitution for Specified Items**. Bids shall be based on products and systems specified in the Contract Documents or listed by name in Addenda. All requests must comply with the requirements specified in the General Conditions, the Specifications and the following:

    a. **Request for Substitution Prior to Bid**.

        (1) District must receive any request for substitution a minimum of **FOURTEEN (14)** calendar days prior to the date of bid opening.

        (2) **Information with Request.** Requests for substitutions shall contain sufficient information to assess acceptability of the product or system and impact to Project, including, without limitation, the requirements specified in the General Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.

        (3) The District's denial of a substitution request prior to the date of bid opening shall be conclusive, requiring Bidders to list only approved items. The District is not responsible and/or liable in any way for a Bidder's damages and/or claims related, in any way, to that Bidder's basing its bid on any requested substitution that the District has not approved. Bidder's Bid shall be deemed non-responsive if it identifies a product or manufacturer of a non-approved substitution.

        (4) Approved substitutions shall be listed in Addenda.

        (5) District reserves the right not to act upon submittals of substitutions until after the date of bid opening. If the District does not act on a substitution request prior to the date of bid opening, Bidders must bid based on products and systems specified in Contract Documents or listed by name in Addenda.

    b. **Request for Substitution after Bid Award**. Substitutions may be requested after the Contract has been awarded only if indicated in and in accordance with requirements specified in the General Conditions, as may be modified in the Special Conditions.

13. **Alternates.** The Contract may include alternates. Alternates are defined as alternate products, materials,

equipment, systems, methods, or major elements of the construction, that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Invitation to Bid.

14. **Notice of Award.** The Bidder awarded the Contract shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7TH)** calendar day following the date of the Notice of Award. Failure to properly and timely submit these documents entitles District to, among other remedies, make a claim against Bidder's Bid Bond or deposit Bidder's cash, cashier's check, or certified check. The proceeds thereof may be retained by District as liquidated damages, in District's sole discretion.

    a. Agreement: To be executed by successful Bidder. Submit one (1) copy, bearing an original signature.

    b. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.

    c. Payment Bond (100%) (Contractor's Labor and Material Bond): On the form provided in the Contract Documents and fully executed as indicated on the form.

    d. Insurance Certificates and Endorsements as required.

    e. Certifications to be Completed by Contractor

    f. Criminal Background Investigation/Fingerprinting Certification.

15. **Notice to Proceed**. District may issue a Notice to Proceed within **THREE (3)** months from the date of the Notice of Award. Upon receipt of the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation or additional time when the Notice to Proceed is issued within the 3-month period.

    a. The District may postpone issuing the Notice to Proceed beyond the 3-month period, upon reasonable notice to Contractor.

    b. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, the Contractor may, by written notice to District within **SEVEN (7)** calendar days after receipt by Contractor of District's notice of postponement, take one of the following actions:

        (1) **Agree with the postponement**. This would be at no additional cost to the District.

        (2) **Terminate the Contract**. District shall only be obligated to pay Contractor for any Work that Contractor had performed at the time of notification of postponement and that the District had in writing authorized Contractor to perform, if any, prior to issuing a Notice to Proceed.

        (3) **Request additional compensation**. Contractor must submit detailed documentation demonstrating the need for that additional compensation, compared to the calculations and amounts that Contractor used to prepare its bid. If the Parties do not agree on an amount for the requested additional compensation, the Contractor can agree to the postponement without any additional compensation, or either Party may terminate the Contract.

    c. If the Contract is terminated as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible Bidder.

16. **Bid Protests.** Any bid protest by any Bidder regarding any other bid on this Project must be submitted in

writing to the District, before 5:00 p.m. of the **THIRD (3rd)** Business Day following the date of bid opening.

a. The protest must contain a complete statement of any and all bases for the protest.

b. The protest must refer to the specific portions of all documents that form the bases for the protest, including the specific portion(s) of the bid(s) that the Bidder is protesting.

c. The protest must include the name, address and telephone number of the person representing the protesting party.

d. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest, which must include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

e. The procedure and time limits set forth in this paragraph are mandatory and are each Bidder's sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.

17. **Rejection of Bids.** District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any Bidder if District believes that it would not be in the best interest of the District to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive inconsequential deviations not involving price, time, or changes in the Work. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for work item(s) that represent substantive work and/or overly-enhanced prices for nominal work item(s).

18. **Bidder's Representative's Authority.** Each bid must be executed by an authorized representative of the Bidder. Bidders may be asked to provide documentation of that authority (e.g., an authenticated resolution of its Board of Directors, a power of attorney evidencing the capacity of the person signing the Bid Form to bind the Bidder to its bid, etc.).

19. **Bidder Responsibility.** Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the Contract Time.

END OF DOCUMENT

DOCUMENT 00 31 19

EXISTING INFORMATION AND DOCUMENTATION REGARDING PROJECT SITE

1. Summary

This document describes existing conditions at or near the Project and use of information available regarding existing conditions. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein. Contractor is required to request from the District a copy of any reports that it believes are necessary to perform Contractor's Work in a safe, efficient and workman-like manner.

2. Reports and Information on Existing Conditions

a. Documents providing a general description of the Site and conditions of the Work may have been collected by District, its consultants, contractors, and tenants. These documents may include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.

b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents.

c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.

d. The reports and other data or information regarding existing conditions and underground facilities at or contiguous to the Project are the following:

(1) **Geotechnical Data**. Geotechnical data at or near the Project that is in the District's possession available for Contractor's review.
(2) **Hazardous Material Reports**
(3) **Asbestos and/or AHERA Reports**. Asbestos survey report, prepared for this Project and/or this Project site is attached in the supplementary conditions section of the Project Manual.

3. Use of Information

a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.

b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.

c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Contractor by the performance of its own independent investigation that Contractor must perform as a condition to bidding, and Contractor should not and shall not rely on this information or any other information supplied by District regarding existing conditions.

d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or

others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.

e. District shall be responsible only for the general accuracy of information regarding underground facilities, and only for those underground facilities that are owned by District, and only where Bidder has conducted the independent investigation required of it pursuant to the Instructions to Bidders, and discrepancies are not apparent.

4. Limited Reliance on Certain Information

a. Reference is made herein for identification of:

(1) Reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by District in preparation of the Contract Documents.

(2) Drawings of physical conditions in or relating to existing subsurface structures (except underground facilities) that are at or contiguous to the Site and have been utilized by District in preparation of the Contract Documents.

b. Bidder may rely upon the general accuracy of the "technical data" contained in the reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required pursuant to Instructions to Bidders, and discrepancies are not apparent. The term "technical data" in the referenced reports and drawings shall be limited as follows:

(1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.

(2) The term "technical data" shall not include the location of underground facilities.

(3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.

(4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

5. Investigations/Site Examinations

a. Before submitting a Bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.

b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its

explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Invitation to Bid and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM

To: Governing Board of **Downey Unified School District** ("District")

From: _____
(Proper Name of Bidder)

1. **Total Bid.** The undersigned declares that the Contract Documents including, without limitation, the Invitation to Bid, the Instructions to Bidders, and the Special Conditions have been read, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications for the following project:

   Sussman Food Service Renovation ("Project" or "Contract")

   and will accept in full payment for that Work the following total lump sum amount, all taxes included:

TOTAL BASE BID
NOTE: IF THERE ARE ALLOWANCES IDENTIFIED IN THIS BID FORM, DO <u>NOT</u> INCLUDE ANY ALLOWANCE(S) AMOUNTS IN THESE BID AMOUNTS. **$ _____ Dollars**

2. **<u>Allowance(s).</u>** The Bidder's Base Bid shall **<u>NOT</u>** include the following potential Allowance(s). The District will add some or all of the following Allowance(s) amount(s) to the successful bidder's Contract, at the District's discretion. Contractor shall be permitted to invoice for Work under an Allowance in the identical structure as a Change Order.

3. **<u>Contract Review.</u>** The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this bid, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its bid, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

4. **<u>Requests for Clarification.</u>** The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.

5. **<u>Contract Time.</u>** The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.

6. **<u>Contractual Provisions.</u>** The undersigned hereby acknowledges and agrees to be bound by following provisions and all provisions in the Contract Documents:

   - The liquidated damages clause of the General Conditions and Agreement.
   - The "Changes in the Work" provisions in the General Conditions that limit the permitted charges and mark-ups on change orders and on the amount of home office overhead that the successful

bidder can receive from the District.

- The "Claims" provisions in the General Conditions that delineate the required process to submit and process disputes and claims.

- The "COVID-19" provisions in the Contract Documents related to the Contractor's staffing requirements and its compliance with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain.

7. **Bid Open for 90 Days.** It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.

8. **Attachments.** The following documents are attached hereto:

   - The Bid Bond on the District's form or other security
   - The Designated Subcontractors List
   - The Noncollusion Declaration
   - Iran Contracting Act Certification

9. **Addenda Acknowledgement.** Receipt and acceptance of the following addenda is hereby acknowledged:

No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
☐ Or check here if **no** addenda were issued.	

10. **Bidder's License.** Bidder acknowledges that the license required for performance of the Work is as stated in the Invitation to Bid. Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

11. **Labor Harmony.** The undersigned hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

12. **DIR Registration.** Bidder shall ensure that it and its Subcontractors comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner, and are registered pursuant to Labor Code section 1725.5.

13. **General Acknowledgement.** The Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

14. **False Claims Act.** Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 _____

Signature _____

Signed by (Print Name) _____

Title of Person Signing _____

Name of Bidder _____

Type of Organization _____

Address of Bidder _____

Taxpayer's Identification No. of Bidder _____

Telephone Number _____

Fax Number _____

E-mail _____ Web page _____

Bidder's DIR Registration No.: No.:_____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

If Bidder is a corporation, provide the following:

Name of Corporation: _____

President: _____

Secretary: _____

Treasurer: _____

END OF DOCUMENT

DOCUMENT 00 43 13

BID BOND (SECURITY)
(Note: If Bidder is providing a bid bond as its bid security, Bidder must use this form, NOT a surety company form.)

The undersigned, _____ as Principal ("Principal");

and _____ as Surety ("Surety"; a corporation organized and existing under and by virtue of the laws of the State of _____ and authorized to do business as a surety in the State of California) are held and firmly bound unto the **Downey Unified School District** ("District") as Obligee, in the sum of **$_____ Dollars,** lawful money of the United States, for the payment to the District will and truly to be made pursuant to the provisions herein. Principal and Surety each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the District for all Work specifically described in the accompanying bid and if the District awards the contract to the Principal and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to Principal for signature, the Principal enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds (one guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by law), and meets all other conditions to the contract between the Principal and the Obligee becoming effective, or if the Principal shall fully reimburse and save harmless the Obligee from any damage sustained by the Obligee through failure of the Principal to enter into the written contract and to file the required performance and labor and material bonds, and to meet all other conditions to the Contract between the Principal and the Obligee becoming effective, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect and the Surety shall immediately issue full payment of the sum stated above to the Obligee upon notification from the Obligee that the Principal has not taken all steps to nullify or void this obligation.

Surety agrees that no change, extension of time, alteration or addition to the terms of the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in that suit, including a reasonable attorneys' fee to be fixed by the Court.

If the District awards the bid, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

IN WITNESS WHEREOF, this instrument has been duty executed by the Principal and Surety above named, on

_____, 20_____.

_____
Principal

_____
By

_____
Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone Number of California Agent of Surety

Bidder must attach Power of Attorney and Certificate of Authority for Surety and a Notarial Acknowledgment for all Surety's signatures. The California Department of Insurance must authorize the Surety to be an admitted Surety Insurer.

END OF DOCUMENT

DOCUMENT 00 43 36

DESIGNATED SUBCONTRACTORS LIST

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

Sussman Food Service Renovation ("Project" or "Contract")

1. **Listed.** Bidder must list hereinafter the name and location of each subcontractor who will be employed, and the scope of Work that each will perform if the Contract is awarded to the Bidder. Bidder acknowledges and agrees that under Public Contract Code section 4100, et seq., it must clearly identify the name and location of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work in an amount in excess of one-half of one percent (1/2 of 1%) of Bidder's total Bid.

2. **CSLB Number.** Bidder must provide the Contactor State License Board number ("**CSLB No**.") for all listed subcontractors.

3. **DIR Number.** Bidder must provide the Department of Industrial Relations registration number ("**DIR No**.") for all listed subcontractors.

4. **Same Scope.** If more than one subcontractor is named for the same scope of Work, state with specificity the particular scope or portion that each subcontractor will perform.

5. **No Vendors or Suppliers.** Bidder need not list entities that are only vendors or suppliers of materials.

6. **Not Listed.** As to any Work that Bidder fails to list that is in excess of one-half of one percent (1/2 of 1%) of Bidder's total Bid, Bidder agrees that it is qualified to perform that scope of Work and will perform that scope of Work, or be subjected to penalty under applicable law.

7. **Alternate Work.** If alternate bids are called for and Bidder intends to use Subcontractors different from or in addition to those Subcontractors listed for work under the base Bid, Bidder must list Subcontractors that will perform Work in an amount in excess of one half of one percent (1/2 of 1%) of Bidder's total Bid, including alternates.

8. **Bidders may correct inadvertent error(s) in listing subcontractors' CSLB Nos. or DIR Nos. within twenty-four (24) hours after bid opening.**

9. **Additional Sheets.** If further space is required for the list of proposed subcontractors, additional sheets showing the required information, as indicated below, shall be attached hereto and made a part of this document and submitted with this form.

I certify and declare under penalty of perjury under the laws of the State of California that all the information listed on the following page(s) is complete, true, and correct.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	**Portion of Work (Scope)**	**Location of Business**	**CSLB No.:**
			DIR No.:
			If DVBE, % of Work:

END OF DOCUMENT

DOCUMENT 00 43 40

NONCOLLUSION DECLARATION
Public Contract Code § 7106

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ [**PRINT YOUR TITLE**]

of _____ [**PRINT FIRM NAME**],

the party making the foregoing bid.

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on the following date:

Date: _____

Proper Name of Bidder: _____

City, State: _____, _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 43 50

IRAN CONTRACTING ACT CERTIFICATION (Public Contract Code § 2204)

Sussman Food Service Renovation ("Project" or "Contract")

Pursuant to Public Contract Code (PCC) section 2204, an Iran Contracting Act certification is required for solicitations of goods or services of one million dollars ($1,000,000) or more.

Bidder shall complete **ONLY ONE** of the following three paragraphs.

☐ 1. Bidder's Total Base Bid is less than one million dollars ($1,000,000).

OR

☐ 2. Bidder's Total Base Bid is one million dollars ($1,000,000) or more, but Bidder is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code § 2203(b), and Bidder is not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

OR

☐ 3. Bidder's Total Base Bid is one million dollars ($1,000,000) or more, but the District has given prior written permission to Bidder to submit a proposal pursuant to PCC 2203(c) or (d). **A copy of the written permission from the District is included with Bid**.

I certify that I am duly authorized to legally bind the Bidder to this certification, that the contents of this certification are true, and that this certification is made under the laws of the State of California.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 00

NOTICE OF AWARD

Dated: _____, 20___

To: _____
("Contractor")

_____
(Address)

From: Governing Board ("Board") of **Downey Unified School District** ("District")

Re: **Sussman Food Service Renovation (**"Project" or "Contract")

Contractor was awarded the Contract on _____, 20___,by action of the District's Board.

The Contract Price is **$** _____ **Dollars** and includes alternates _____.

Three (3) copies of each of the Contract Documents (except Drawings) accompany the Notice of Award. Three (3) sets of the Drawings will be delivered separately or otherwise made available. Additional copies are available at cost of reproduction.

Contractor must comply with the following conditions precedent within **SEVEN (7)** calendar days of the date of this Notice of Award.

Contractor shall execute and submit the following Contract Documents by 5:00 p.m. of the **SEVENTH (7TH)** calendar day following the date of the Notice of Award. Failure to properly and timely submit the following Contract Documents entitles District to foreclose on Contractor's bid bond and award the contract to the next responsive, responsible bidder.

a. Agreement: Submit four (4) copies, each bearing an original signature. **If Contractor is a corporation, Contractor must attach a certified copy of the corporation's by-laws, or the resolution of the Board of Directors of the corporation, authorizing the signatory to execute the Agreement and the bonds required by the Contract Documents.**

b. Performance Bond (100%): Fully executed form provided in the Contract Documents.

c. Payment Bond (100%) (Contractor's Labor and Material Bond): Fully executed form provided in the Contract Documents.

d. Insurance Certificates and Endorsements as required.

e. Certifications to be Completed by Contractor

f. Criminal Background Investigation/Fingerprinting Certification.

Failure to comply with these conditions within the time specified will entitle District to consider Contractor's bid abandoned, to annul the Notice of Award, and to declare Contractor's Bid Security forfeited, as well as any other rights the District may have against Contractor.

District will return to Contractor one fully signed counterpart of the Agreement.

Downey Unified School District

SIGNATURE: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

DOCUMENT 00 45 10

AGREEMENT

This agreement is made and entered into on _____, 202_____, by and between the **Downey Unified School District** ("District") and _____ ("**Contractor**") ("**Agreement**"). The District and the Contractor agree as follows:

1. **The Work:** Contractor shall furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

   Sussman Food Service Renovation ("**Project**" or "**Contract**" or "**Work**")

   The Work shall be performed and completed as required in the Contract Documents as defined in the General Conditions including, without limitation, the Drawings and Specifications, under the direction and supervision of, and subject to, the approval of the District or its authorized representative.

2. **The Contract Documents**:

   a. The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. All obligations of the District and Contractor are fully set forth and described in the Contract Documents. The Contract Documents are intended to cooperate so that Work called for in one and not mentioned in the other or vice versa is to be performed the same as if mentioned in all Contract Documents.

   b. **Interpretation of Contract Documents/Order of Precedence**: Questions concerning the intent, precedence, or meaning of the Contract Documents, including the Drawings or Specifications, shall be submitted to the District for interpretation. Inconsistencies in the Contract Documents shall be resolved by giving precedence in the following order:

      (i) District-approved modifications (e.g., Change Orders, Force Account Directives, etc.), beginning with the most recent (if any);
      (ii) Agreement;
      (iii) Special Conditions (if any);
      (iv) Supplemental Conditions (if any);
      (v) General Conditions;
      (vi) Remaining Division 0 documents (Documents beginning with "00");
      (vii) Division 1 Documents (Documents beginning with "01");
      (viii) Division 2 through Division 49 documents (Technical Specifications);
      (ix) Figured dimensions;
      (x) Large-scale drawings;
      (xi) Small-scale drawings.

      In case of conflict, the greater quantity and/or higher standard of workmanship shall apply unless the District expressly in writing (e.g., via a Change Order) accepts a lesser quantity or lower quality of workmanship and the Contract Price is adjusted accordingly. The decision of the District in the matter shall be final.

3. **Integration / Modification.** The Contract Documents and any documents specifically incorporated by reference are completely integrated as the complete and exclusive statement of the terms of the Agreement. This Agreement supersedes all previous contracts, agreements, and / or communications, both oral and written, and constitutes the entire understanding of the District and Contractor. No extrinsic evidence whatsoever shall be admissible or used to explain or supplement the terms of the Contract, Contract

Documents, or any items incorporated by reference. No changes, amendments or alterations shall be effective unless in writing, signed by both Parties, and unless provided otherwise by the Contract Documents.

4. **Classification of Contractor's License**: Contractor hereby acknowledges that it currently holds valid Type B license(s) issued by the State of California, Contractor's State Licensing Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

5. **Time for Completion**: It is hereby understood and agreed that the Contractor shall complete the Work within one hundred ninety-one (191) consecutive calendar days ("**Contract Time**") from the date specified in the District's Notice to Proceed. The District shall not approve an early completion schedule by Contractor. A schedule showing the Work completed in less than the Contract Time indicated in the Contract, shall be considered to have Project Float.

6. **Completion-Extension of Time**: If Contractor fails to complete the Work within the Contract Time, due allowance being made for the contingencies provided for herein, Contractor shall become liable to District for all loss and damage that District may suffer on account thereof. Contractor shall coordinate its Work with the work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that allows for timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the work of other contractors.

7. **Liquidated Damages**: Time is of the essence for all Work to be performed. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that District will sustain in the event of and by reason of Contractor's delay; therefore, pursuant to Government Code section 53069.85 and Public Contract Code section 7203, Contractor shall forfeit and pay to District the following sum(s) as liquidated damages ("**Liquidated Damages**"):

    - **Project Completion: $1,200.00 dollars** per day as Liquidated Damages for each and every day's delay beyond the Contract Time to complete all the Work.

8. Each portion of the Liquidated Damages shall be calculated cumulatively. For example, if Contractor is late in completing two milestones and the entire Project, Contractor will forfeit and pay three separate Liquidated Damages amounts. It is hereby understood and agreed that neither the total cumulative Liquidate Damages amount nor any portion of the Liquidated Damage amount are penalties.

9. District may deduct Liquidated Damages from money due or that may become due Contractor under this Agreement. Contractor's forfeiture of Liquidated Damages to District, and District's right to retain Liquidated Damages, are as indicated in Government Code section 53069.85 and as indicated herein and in the General Conditions. Liquidated Damages are automatically and without notice of any kind forfeited and payable by Contractor upon the accrual of each day of delay. Neither District's failure or delay in deducting Liquidated Damages from payments otherwise due the Contractor, nor District's failure or delay in notifying Contractor of the forfeiture and payment of Liquidated Damages, shall be deemed a waiver of District's right to Liquidated Damages and/or the District's right to withhold Liquidated Damages from any amounts that would otherwise be payable to the Contractor.

10. Contractor and Surety shall be liable for and pay to District the entire amount of Liquidated Damages including any portion that exceeds the amount of the Contract Price then held, retained or controlled by District.

11. Liquidated Damages shall be in addition, and not in lieu of, District's right to charge Contractor for the District's cost of completing or correcting items of the Work.

8. **Contract Price**: In consideration of the foregoing covenants, promises, and agreements, Contractor offers, in the amounts stated below, to perform the Work according to the Contract Documents. District covenants, promises, and agrees that it will pay and cause to be paid to Contractor in full, and as the Contract Price the following amount(s):

   $ _____ Dollars

   ("Contract Price")

   a. The Contract Price shall be paid in lawful money of the United States pursuant to the payment provisions in the General Conditions.

   b. The District may, at its sole discretion, increase or decrease the Contract Price by unit prices or alternates contained in Contractor's original bid. If the Bid for the Work included proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add any such Alternate Bid Item(s) if the item did not form a basis for award of the Agreement or delete any such Alternate Bid Item(s) if that item formed a basis for award of the Agreement. If the District elects to add or delete an Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for that Alternate Bid Item(s) shall be as set forth in the Contractor's Bid, at the District's discretion. If any Alternate Bid Item is added or deleted from the Work pursuant to the foregoing, the Contract Time shall be adjusted by the number of days allocated for the added or deleted Alternate Bid Item in the Contract Documents; if days are not allocated for any Alternate Bid Item added or deleted pursuant to the foregoing, the Contract Time shall be equitably adjusted.

9. **Insurance and Bonds**: Contractor shall provide all required certificates of insurance, and payment and performance bonds.

10. **Performance of Work**: If Contractor fails to perform the Work properly or fails to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, cure the deficiencies and deduct the cost thereof from the payment then or thereafter due Contractor.

11. **COVID-19.** Contractor is responsible for complying with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).

12. **Authority of Architect, Project Inspector, and DSA**: Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect have authority to approve and/or stop Work if Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws. Contractor shall be liable for any delay caused by its non-compliant Work.

13. **Assignment of Contract**: Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by Contractor without the written approval of District, nor without the written consent of the Surety on Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

14. **Payment of Prevailing Wages**: Contractor and all Subcontractors under Contractor shall pay all workers on Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

15. **Contractor & Subcontractor Registration**: Contractor shall comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including complying with any applicable enforcement by the Department of Industrial Relations.

16. **Authority of Contractor's Representatives**: Contractor hereby certifies that the person who executes this Agreement has the authority and power to legally bind the Contractor. Contractor also certifies that each person(s) it employees on the Project at or above the level of project superintendent, has the authority to legally bind the Contractor.

17. **Severability**: If any term, covenant, condition, or provision of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

18. **Notice**: Any notice required by the Agreement shall be in writing, dated and signed by the party giving notice or by a duly authorized representative of that party. Notice shall be served and considered effective if given in one of the following manners and to the following persons and addresses:

    a. By personal delivery; considered delivered on the day of delivery.

    b. By overnight delivery service; considered delivered one (1) day after date deposited, as indicated by the delivery service.

    c. By depositing same in United States mail, enclosed in a sealed envelope; considered delivered three (3) days after date deposited, as indicated by the postmarked date.

    d. By registered or certified mail with postage prepaid, return receipt requested; considered delivered on the day the notice is signed for.

If to District	**If to Contractor:**
Downey Unified School District	_____
11627 Brookshire Ave.	_____, CA _____
Downey, CA 90241	ATTN: _____
ATTN: Vince Madsen	

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

Dated: _____, 20_____	Dated: _____, 20_____
Downey Unified School District	_____ **Contractor**
Signature: _____	Signature: _____
Print Name: _____	Print Name: _____
Print Title: _____	Print Title: _____

NOTE: If the Contractor is a corporation, Contractor must attach a certified copy of the corporation's by-laws, or of the resolution of the Board of Directors of the corporation, authorizing the above person to execute this Agreement and the bonds required by the Contract Documents.

END OF DOCUMENT

DOCUMENT 00 45 40

CERTIFICATIONS TO BE COMPLETED BY CONTRACTOR

THE UNDERSIGNED MUST CHECK EACH BOX AND EXECUTE THIS FORM AND HEREBY CERTIFIES TO THE GOVERNING BOARD OF THE DISTRICT THAT:

- The undersigned is a representative of the Contractor,
- The undersigned is familiar with the facts herein certified and acknowledged,
- The undersigned is authorized and qualified to execute this Agreement and these certifications on behalf of Contractor and that by executing this Agreement undersigned is certifying the following items.

☐ **Labor Code Sections 1860-1861 (Workers' Compensation).** In accordance with Labor Code section 3700, every contractor will be required to secure the payment of compensation to his or her employees. I acknowledge and certify under penalty of perjury that 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.

☐ **Government Code Sections 8355-8357 (Drug-Free Workplace).** I acknowledge and certify under penalty of perjury that I will provide a drug-free workplace by doing all of the following:

(1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying the actions that will be taken against employees for violations of the prohibition.
(2) Establishing a drug-free awareness program to inform employees about all of the following:
(A) The dangers of drug abuse in the workplace.
(B) The person's or organization's policy of maintaining a drug-free workplace.
(C) Any available drug counseling, rehabilitation, and employee assistance programs.
(D) The penalties that may be imposed upon employees for drug abuse violations.
(3) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I also acknowledge that this Contract may be subject to suspension of payments under the contract or grant or termination of the contract or grant, or both, and the contractor or grantee thereunder may be subject to debarment, in accordance with the requirements of the above-referenced statute, if the contracting or granting agency determines that any of the following has occurred:

(1) The contractor or grantee has made a false certification under Section 8355.
(2) The contractor or grantee violates the certification by failing to carry out the requirements of subdivisions (a) to (c), inclusive, of Section 8355.

I also acknowledge that the Department of General Services shall establish and maintain a list of individuals and organizations whose contracts or grants have been canceled due to failure to comply with the above-referenced statute. This list shall be updated monthly and published each month. No state agency shall award a contract or grant to a person or organization on the published list until that person or organization has complied with the above-referenced statute.

☐ **Tobacco-Free Environment**. Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq. and District Board Policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property.

I acknowledge and certify under penalty of perjury that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and acknowledge and certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents to use tobacco and/or smoke on the Project site. The District also prohibits electronic cigarettes, "vaping" or similar product uses on District sites.

☐ **No Hazardous Materials.** I acknowledge and certify under penalty of perjury that no Asbestos, or Asbestos-Containing Materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District. I have instructed our employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

(i) Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos-containing material. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.

(ii) All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing "New Hazardous Material," will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.

The Contractor must immediately notify the District within two (2) Business Days, if the Contractor finds and before it disturbs, any material that the Contractor believes may be hazardous waste, as defined in section 25117 of the Health and Safety Code, and requires removal to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

☐ **Lead as a Health Hazard**. Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburses when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, **Contractor is hereby notified** of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to

1993 are presumed to contain some lead-based paint until sampling proves otherwise.

(i) **Overview of California Law**

Education Code section 32240 et seq. is known as the Lead Safe Schools Protection Act. Under this act, the Department of Health Services ("DHS") is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead-based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to that regulation. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. It includes, but is not limited to, the following:

a. Demolition or salvage of structures where lead or materials containing lead are present;

b. Removal or encapsulation of materials containing lead;

c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;

d. Installation of products containing lead;

e. Lead contamination/emergency cleanup;

f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and

g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532. 1).

The Contractor must notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials must be coordinated through the District. A signed copy of this Certification must be on file prior to beginning Work on the Project, along with all current insurance certificates.

(ii) **Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act**

In 2008, the U.S. Environmental Protection Agency, issued a rule pursuant to the authority of Section 402(c)(3)

of the Toxic Substances Control Act, requiring lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint (Renovation, Repair and Painting Rule). Renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with accredited training, and following the work practice requirements to reduce human exposures to lead.

Contractor, its workers and subcontractors must fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The requirements apply to all contractors who disturb lead-based paint in a six-square-foot area or greater indoors or a 20-square-foot area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

(iii) **Contractor's Liability**

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

I acknowledge and certify under penalty of perjury, that:

1. I have received notification of potential lead-based materials on the District's property;
2. I am knowledgeable regarding and will comply with all applicable laws, rules, and regulations governing work with, and disposal of, lead.

☐ **Imported Materials.** All soils, aggregate, or related materials ("Fill") that Contractor, a Subcontractor, agent or supplier, in any way, provides or delivers and/or supplies to the Project Site shall be free of any and all hazardous material as defined in section 25260 of the Health and Safety Code, shall satisfy the requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, sections 21000 et seq. of the Public Resources Code ("CEQA"), and shall comply with the requirements of sections 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control. I acknowledge that, to the furthest extent permitted by California law, the indemnification provisions in the Contract Documents apply to, without limitation, any claim(s) connected with providing, delivering, and/or supplying Fill.

☐ **Roofing Contract Financial Interest Certification (Public Contract Code § 3006)**

I, _____ [**Your Name**], _____ [**Firm Name**] certify that I have not offered, given, or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with a roof project contract or subcontract on the Project. As used in this certification, "person" means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

I, _____ [**Your Name**], _____ [**Firm Name**] certify that I do not have, and throughout the duration of the Contract, I will not have, any financial relationship in connection with the performance of the Contract with any architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

I, _____ [**Your Name**], _____ [**Firm Name**] have the following financial relationships with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

Name of firm ("Firm"): _____
Mailing address: _____
Address of branch office used for this Project: _____
If subsidiary, name and address of parent company: _____

For Projects without substantive roofing components, check the following box and execute this certification:

☐ The Work on the Contract (1) does not include the replacement or repair of a roof or (2) is a repair of twenty five percent (25%) or less of the roof, (3) or is a repair project that has a total cost of twenty one thousand dollars ($21,000) or less.

☐ **Russian Sanctions Certification**

On February 21, 2022, President Biden issued Executive Order 14065 (https://www.whitehouse.gov/briefing-room/presidential-actions/2022/02/21/executive-order-on-blocking-property-of-certain-persons-and-prohibiting-certain-transactions-with-respect-to-continued-russian-efforts-to-undermine-the-sovereignty-and-territorial-integrity-of-ukraine/; "**Federal Order**") imposing economic sanctions and prohibiting many activities including, but not limited to, investing in, importing to, exporting from, and contracting with, areas of Ukraine and in Russia. On March 4, 2022, California Governor Newsom issued Executive Order N-6-22 requiring state agencies to take steps to ensure any agency and entity under contract with state agencies comply with the Federal Order (https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf; "**State Order**").

The District requires the Contractor, as a vendor with the District, to comply with the economic sanctions imposed in response to Russia's actions in Ukraine, including the orders and sanctions identified on the U.S. Department of the Treasury website (https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions).

If your Firm's contract with the District has a cumulative value of $5 million or more, your certification here constitutes your written response to the District, indicating:

(1) that your Firm is in compliance with the required economic sanctions of the Federal and State Orders;

(2) the steps your Firm has taken in response to Russia's actions in Ukraine, including, but not limited to, desisting from making new investments in, or engaging in financial transactions with, Russian entities, not

transferring technology to Russia or Russian entities, and directly providing support to the government and people of Ukraine.

I ACKNOWLEDGE AND CERTIFY UNDER PENALTY OF PERJURY THAT I AM DULY AUTHORIZED TO LEGALLY BIND THE CONTRACTOR TO ALL PROVISIONS AND ITEMS INCLUDED IN THESE CERTIFICATIONS, THAT THE CONTENTS OF THESE CERTIFICATIONS ARE TRUE, AND THAT THESE CERTIFICATIONS ARE MADE UNDER THE LAWS OF THE STATE OF CALIFORNIA.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 85

CRIMINAL BACKGROUND INVESTIGATION / FINGERPRINTING CERTIFICATION

The undersigned does hereby certify to the governing board of the District that undersigned is a representative of the Contractor, is familiar with the facts herein certified, is authorized and qualified to execute this certificate on behalf of Contractor; and that the information in this Criminal Background Investigation / Fingerprinting Certification is true and correct.

1. **Education Code.** Contractor has taken at least one of the following actions (check all that apply):

☐ **All Workers Fingerprinted.** The Contractor has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor's employees and all of its subcontractors' employees who interact with pupils, outside of the immediate supervision and control of the pupil's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237 (Contractor shall "require each applicant for employment in a position requiring contact with minor pupils to submit two sets of fingerprints prepared for submittal by the employer to the Department of Justice for the purpose of obtaining criminal record summary information from the Department of Justice and the Federal Bureau of Investigation."). A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may interact with District pupils during the course and scope of the Contract is attached hereto; and/or

☐ **Physical Barrier.** Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Contractor's employees and District pupils at all times; and/or

☐ **Continual Supervision by Fingerprinted Employee.** Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's employees and its subcontractors' employees is:
Name: _____ **Title:** _____

☐ **Unoccupied Site**. The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

2. **Megan's Law (Sex Offenders).** I have verified and will continue to verify that the employees of Contractor that will be on the Project site and the employees of the Subcontractor(s) that will be on the Project site are **not** listed on California's "Megan's Law" Website (http://www.meganslaw.ca.gov/).

Contractor's responsibility for background clearance extends to all of its employees, subcontractors, and employees of subcontractors coming into contact with District pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 61 14

PERFORMANCE BOND (100% of Contract Price)
(Note: Contractors must use this form, NOT a surety company form.)

WHEREAS, the governing board ("Board") of the **Downey Unified School District**, ("District") and

_____, ("Principal)"

have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Sussman Food Service Renovation ("Project" or "Contract")

which Contract dated _____, 20___, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, the Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract;

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto the District in the penal sum of:

$ _____ DOLLARS,

lawful money of the United States, for payment to the District and will and truly be made pursuant to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally to:

- Perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

In the event the Principal is declared by the District to be in breach or default in the performance of the Contract, then, after written notice from the District to the Surety, as provided for herein, the Surety shall either remedy the default or breach of the Principal or shall take charge of the Work of the Contract and complete the Contract with a Contractor other than the Principal at its own expense; provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the District.

The condition of the obligation is such that, if the above bounden Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warrantees of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair, replace, and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein

shall limit the District's rights or the Contractor's or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

Any claims under this bond may be addressed to the Surety at the following address. This cannot be the Contractor's broker for this bond, but must be an employee of the Surety or the Surety's legal counsel:

_____

_____

Attention: _____

Telephone No.: **(_____) _____-_____**

Fax No.: **(_____) _____-_____**

E-mail Address: _____

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20___.

Principal	**Surety**
_____	_____
(Name of Principal)	(Name of Surety)
_____	_____
(Signature of Person with Authority)	(Signature of Person with Authority)
_____	_____
(Print Name)	(Print Name)
	_____
	(Name of California Agent of Surety)
	_____
	(Address of California Agent of Surety)
	_____
	(Telephone Number of California Agent of Surety)

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

DOCUMENT 00 61 15

PAYMENT BOND -- Contractor's Labor & Material Bond (100% of Contract Price)
(Note: Contractors must use this form, NOT a surety company form.)

WHEREAS, the governing board ("Board") of the **Downey Unified School District**, ("District") and

_____, ("Principal)"

have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Sussman Food Service Renovation ("Project" or "Contract")

which Contract dated _____, 20___, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to 100 percent (100%) of the Contract price, to secure the claims to which reference is made in the Civil Code of California, including section 9100, and the Labor Code of California, including section 1741.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the penal sum of:

$ _____ DOLLARS,

lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made pursuant to all applicable statutes and laws applicable to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, to those applicable statutes and laws, and to the provisions herein.

The condition of this obligation is that if the Principal or any of his or its subcontractors, of the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, 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 Act with respect to that work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under sections 9000 through 9566 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20___.

Principal	**Surety**
_____	_____
(Name of Principal)	(Name of Surety)
_____	_____
(Signature of Person with Authority)	(Signature of Person with Authority)
_____	_____
(Print Name)	(Print Name)
	_____
	(Name of California Agent of Surety)
	_____
	(Address of California Agent of Surety)
	_____
	(Telephone Number of California Agent of Surety)

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

DOCUMENT 00 63 57

PROPOSED CHANGE ORDER FORM

Downey Unified School District

11627 Brookshire Avenue

Downey , CA 90241

PCO NO.:

Project: _____ **Date: _____**

Bid No.: _____ **DSA File No.: _____**

RFI #:_____ **DSA Appl. No.:_____**

Contractor hereby submits for District's review and evaluation this Proposed Change Order ("PCO"), submitted in accordance with and subject to the terms of the Contract Documents, including Sections 17.7 and 17.8 of the General Conditions. Any spaces left blank below are deemed no change to cost or time.

Contractor understands and acknowledges that documentation supporting Contractor's PCO must be attached and included for District review and evaluation. Contractor further understands and acknowledges that failure to include documentation sufficient to, in District's discretion, support some or all of the PCO, shall result in a rejected PCO.

	WORK PERFORMED OTHER THAN BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully encumbered)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Subtotal**		
(e)	**Add overhead and profit for any and all tiers of Subcontractor**, the total not to exceed ten percent (10%) of Item (d)		
(f)	**Subtotal**		
(g)	**Add Overhead and Profit for Contractor**, not to exceed five percent (5%) of Item (f)		
(h)	**Subtotal**		

(i)	**Add Bond and Insurance**, not to exceed one and a half percent (1.5%) of Item (h)		
(j)	**TOTAL**		
(k)	**Time** (zero unless indicated; "TBD" not permitted)	**____ Calendar Days**	

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

	WORK PERFORMED BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully encumbered)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Subtotal**		
(e)	**Add Overhead and Profit for Contractor**, not to exceed fifteen percent (15%) of Item (d)		
(f)	**Subtotal**		
(g)	**Add Bond and Insurance**, not to exceed one and a half percent (1.5%) of Item (f)		
(h)	**TOTAL**		
(i)	**Time** (zero unless indicated; "TBD" not permitted)	**____ Calendar Days**	

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

SUBMITTED BY:

Contractor:

_____ _____

[Name] Date

END OF DOCUMENT

DOCUMENT 00 63 63

CHANGE ORDER FORM

Downey Unified School District
11627 Brookshire Avenue
Downey , CA 90241

CHANGE ORDER NO.:

CHANGE ORDER

Project: _____

Bid No.: _____

Date: _____

DSA File No.: _____

DSA Appl. No.:_____

The following parties agree to the terms of this Change Order:

Owner: _____

[Name / Address]

_____

_____

Contractor: _____

[Name / Address]

_____

_____

Architect: _____

[Name / Address]

_____

_____

Project Inspector: _____

[Name / Address]

_____

_____

Reference	Description	Cost	Days Ext.
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	$	
PCO # Requested by: Performed by:	[Description of change] [Requester] [Performer]	$	

Reason:	[Reason]		
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	$	

Contract time will be adjusted as follows: Previous Completion Date: [Date] [#] Calendar Days Extension (zero unless otherwise indicated) Current Completion Date: [Date]	Original Contract Amount:	$
	Amount of Previously Approved Change Order(s):	$
	Amount of this Change Order:	$
	Contract Amount:	$

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire work as stated therein, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

This change order is subject to approval by the governing board of this District and must be signed by the District. Until such time as this change order is approved by the District's governing board and executed by a duly authorized District representative, this change order is not effective and not binding.

It is expressly understood that the compensation and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project including without limitation, cumulative impacts. Any costs, expenses, damages or time extensions not included are deemed waived.

Signatures:

District:		Contractor:	
[Name]	Date	[Name]	Date
Architect:		Project Inspector:	
[Name]	Date	[Name]	Date

END OF DOCUMENT

DOCUMENT 00 65 10

NOTICE TO PROCEED

Dated: _____, 20___

To: _____
("Contractor")

_____
(Address)

From: Governing Board ("Board") of **Downey Unified School District** ("District")

Re: **Sussman Food Service Renovation** ("Project" or "Contract")

Contractor is hereby notified that the Contract Time under the Contract will commence to run on _____ _____, 20___. By that date, Contractor shall start performing its obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the Contract Time and Project Completion is _____, 20___.

Contractor must submit the following documents by 5:00 p.m. of the **TENTH (10TH)** calendar day following the date of this Notice to Proceed:

1. Contractor's preliminary schedule of construction.

2. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals.

3. Contractor's preliminary schedule of values for all of the Work.

4. Contractor's preliminary Contractor's Safety Plan specifically adapted for the Project.

5. A complete subcontractors list, including the name, address, telephone number, facsimile number, California State Contractor's License number, classification, and monetary value of all Subcontracts.

Thank you. We look forward to a successful Project.

Downey Unified School District

SIGNATURE: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

DOCUMENT 00 65 36

WARRANTY AND GUARANTEE FORM

1. _____("Contractor")

hereby agrees that the _____ ("Work" of Contractor)

which Contractor has installed for the **Downey Unified School District** ("District") for the following project:

Sussman Food Service Renovation ("Project" or "Contract")

was performed in accordance with the requirements of the Contract Documents and that the Work as installed fulfills the requirements of the Contract Documents.

2. Contractor agrees to repair or replace all of the Work that may prove to be defective in workmanship or material and any other adjacent Work that may be displaced in connection with such replacement within a period of _____ **YEAR(S)** from the date of Completion as defined in the Contract, ordinary wear and tear and unusual abuse or neglect excepted. The date of completion is _____, 20___.

3. In the event Contractor fails to comply with the above-mentioned conditions within a reasonable period of time, as determined by District, but not later than **SEVEN (7)** calendar days after being notified in writing by District, Contractor authorizes District to proceed to repair or replace the defective Work at the expense of Contractor. Contractor shall pay the costs and charges therefor upon demand.

4. Representatives to be contacted for service subject to the terms of Contract:

NAME: _____

ADDRESS: _____

PHONE NO.: _____

EMAIL: _____

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 70 00

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1. CONTRACT TERMS AND DEFINITIONS

1.1. Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1. Adverse Weather: Weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, heat, or cold conditions in excess of the norm for the location and time of year it occurred, (2) unanticipated, and (3) occurring at the Project Site.

1.1.2. Allowance(s): Amount(s) stated in the Agreement for specific scopes of work for which Contractor may, upon District's written approval, bill its time, materials, and other items in the identical structure as a Change Order.

1.1.3. Approval, Approved, and/or Accepted: Refer to written authorization, unless stated otherwise.

1.1.4. Architect: The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect that has the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the District's Architect on this Project or the Architect's authorized representative. If no Architect is used on the Project, then all references in the Contract Documents to Architect shall be read to refer to District.

1.1.5. As-Built Drawings: A reproducible full-size sets of drawings to be prepared on a monthly basis, and upon Project Completion, pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed.

1.1.6. Bidder: A contractor who provides a bid to the District to perform the Work of the Contract.

1.1.7. Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time. If a Change Order is required to be approved by DSA, the District may call it a Construction Change Document.

1.1.8. Completion: When the entire Work shall have been completed, including all punch list items, as further detailed in the "Completion of the Project" Section herein. Final DSA approval of the Project is not required for Completion. There is no "Substantial Completion" or "Beneficial Occupancy" for this Project, although the District may occupy the Project prior to completion as permitted herein.

1.1.9. Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project, then all references in the Contract Documents to Construction Manager shall be read to refer to District.

1.1.10. Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.11. Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents:

1.1.11.1. Notice to Bidders / Invitation to Bid

1.1.11.2. Instructions to Bidders

1.1.11.3. Bid Form

1.1.11.4. Bid Bond

1.1.11.5. Designated Subcontractors List

1.1.11.6. Noncollusion Declaration

1.1.11.7. Iran Contracting Act Certification

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1.1.11.12. Agreement

1.1.11.13. Storm Water Pollution Prevention Plan (if applicable)

1.1.11.14. Notice to Proceed

1.1.11.15. Performance Bond

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1.1.11.17. District Contract Forms (if applicable)

1.1.11.18. District Closeout Forms (if applicable)

1.1.11.19. Warranty and Guarantee Form

1.1.11.20. General Conditions

1.1.11.21. Special Conditions

1.1.11.22. Project Plans, Specifications, Technical Specifications, and Drawings

1.1.11.23. Addenda to any of the above documents

1.1.11.24. Schedules if approved in writing by the District

1.1.11.25. Change Orders or written modifications to the above documents if approved in writing by the District

1.1.12. Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.13. Contract Time: The time period stated in the Agreement for the Completion of the Work.

1.1.14. Contractor: The licensed person, entity, or entities identified in the Agreement as contracting to

perform the Work.

1.1.15. Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.16. Day(s): Unless otherwise designated, day(s) means calendar day(s). "**Business Day(s)**" shall mean days except Saturday, Sunday, a day that is federally-recognized holiday, or a day that is a California-recognized holiday.

1.1.17. Defective or Nonconforming Work. Defective or nonconforming Work is any Work which is unsatisfactory, faulty or deficient by: (a) not conforming to the requirements of the Contract Documents; (b) not conforming to the standards of workmanship of the applicable trade; (c) not being in compliance with the requirements of any inspection, reference, standard, test, or approval required by the Contract Documents; or (d) damage to Work occurring prior to Completion.

1.1.18. District: The public agency or the school district for which the Work is performed.

1.1.19. Drawings: (or "Plans") The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the Work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.20. DSA: Division of the State Architect.

1.1.21. Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific scope of work or before Contractor prepares a price for the scope of work and Contractor is directed in writing by the District to perform on a time and materials basis.

1.1.22. Premises: The real property owned by the District on which the Project Site is located. For example, if the Project is only being performed on a portion of a school, the Site is only the area where the Project is located (the Project Site), and the Premises is the entire school site.

1.1.23. Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.24. Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Contractor to illustrate a material, product, or system for a scope of the Work.

1.1.25. Project: The planned undertaking as provided for in the Contract Documents.

1.1.26. Project Inspector: (or "Inspector") Individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project. If no Project Inspector is used on the Project, then all references in the Contract Documents to Project Inspector shall be read to refer to District.

1.1.27. Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for the Project then all references to Program Manager shall refer to District.

1.1.28. Proposed Change Order: A written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.29. Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.30. Request for Information: (or "RFI") A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address issues that have arisen under field conditions.

1.1.31. Request for Substitution: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.32. Safety Orders: Written and/or verbal orders for construction issued by the California Division of Industrial Safety ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.33. Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.34. Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.35. Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.36. Site: The Project site as shown on the Drawings.

1.1.37. Specifications: That portion of the Contract Documents, Division 1 through Division 17, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.38. Subcontractor: A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work.

1.1.39. Submittal Schedule: The schedule of submittals as provided by Contractor and approved by District.

1.1.40. Surety: The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.41. SWPPP: The District's Storm Water Pollution Prevention Plan.

1.1.42. Terms. The term "provide" means "provide complete in place" or to "furnish and install" such item. Unless otherwise provided in the Contract Documents, the terms "approved;" "directed;" "satisfactory;" "accepted;" "acceptable;" "proper;" "required;" "necessary" and "equal" shall mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary and equal, in the opinion of the District. The term "typical" as used in the Drawings shall require the installation or furnishing of such item(s) of the Work designated as "typical" in all other areas similarly marked as "typical"; Work in such other areas shall conform to that shown as "typical" or as reasonably inferable therefrom.

1.1.43. Unilateral Change Order: A written order prepared and issued by the District, the Construction

Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. **A Unilateral Change Order is NOT a Construction Change Document (which is defined above as a Change Order that DSA must approve).**

1.1.44. Work: All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and Completion of the Project.

1.2. Laws Concerning the Contract

Contract is subject to all provisions of the Constitution and laws of California and the United States, governing, controlling, or affecting District, or the property, funds, operations, or powers of District, and such provisions are by this reference made a part hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

1.3. No Oral Agreements

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in the Contract Documents.

1.4. No Assignment

Contractor shall not assign the Contract or any part thereof including, without limitation, any services or money to become due without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to be come due under the Contract shall be subject to a prior lien for services rendered or material supplied for Work performed in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for Liquidated Damages or withholding of payments as determined by District in accordance with the Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5. Confidentiality

Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of the Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

1.6. Notice and Service Thereof

Any notice required by the Contract shall be in writing, dated and signed by the party giving notice or by a duly authorized representative of that party and pursuant to the provisions in the Agreement.

1.7. No Waiver

The failure of District in any one or more instances to insist upon strict performance of any term of the Contract or to exercise any District option shall not be construed as a waiver or relinquishment of the right to assert or rely upon any such term or option on a future occasion. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach hereunder, except as may be specifically agreed in writing.

1.8. Substitutions for Specified Items

1.8.1. Requests for substitutions prior to award of the Contract shall be submitted within the time period indicated in the Instructions to Bidders.

1.8.2. Requests for substitutions after award of the Contract shall be submitted within **THIRTY-FIVE** (**35**) days of the date of the Notice of Award. This time period may be extended by the District only, in its sole discretion.

1.8.3. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

1.8.3.1. If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

1.8.3.2. This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(b); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

1.8.4. A request for a substitution shall be in writing and shall include:

1.8.4.1. All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

1.8.4.2. Available maintenance, repair or replacement services;

1.8.4.3. Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

1.8.4.4. Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

1.8.4.5. The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

1.8.5. No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

1.8.5.1. The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

1.8.5.2. The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

1.8.5.3. The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

1.8.5.4. The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

1.8.5.5. The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

1.8.6. In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

1.8.7. In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

1.8.8. If the District approves a substitution after the award of the Contract, the District shall memorialize that approval in a Change Order or other applicable Contract modification process.

1.9. <u>Materials and Work</u>

1.9.1. Except as otherwise stated in the Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete the Contract within the Contract Time.

1.9.2. Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.

1.9.3. Materials shall be furnished in sufficient quantities and at such times as to ensure uninterrupted progress of Work and shall be stored properly and protected as required.

1.9.4. For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

1.9.5. Contractor shall, after award of Contract by District and after relevant submittals have been approved, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the Work. Contractor shall, upon demand from District, present documentary evidence showing that orders have been placed.

1.9.6. District reserves the right but has no obligation, for any neglect in complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the Work may be completed at the date specified in the Agreement, and all expenses incidental to the

procuring of said materials and/or equipment shall be paid for by Contractor or withheld from payment(s) to Contractor.

1.9.7. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon Completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and free from any claims, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any Work shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof.

1.9.8. Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under law permitting such protection or any rights under law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices). This provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

1.9.9. Title to new materials and/or equipment for the Work and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work. Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

1.9.10. Contractor certifies that it shall comply with the recycled product requirements of Public Contract Code section 22150, et seq., including, without limitation, section 22154 which states, "All businesses shall certify in writing to the contracting officer, or his or her representative, the minimum, if not exact, percentage of postconsumer material in the products, materials, goods, or supplies being offered or sold to any local public entity."

2. DISTRICT

2.1. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract.

2.2. The District may, at any time,

2.2.1. Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

2.2.2. Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

2.3. District's Rights if Contractor Fails to Perform. If the District at any time believes that the Contractor is behind schedule, is failing to construct the Project pursuant to the Contract Documents or is otherwise failing to perform any provisions of this Contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may take any action necessary or beneficial to the District to complete the Project, takeover the Work of the Contract, terminate or suspend the Contract as indicated herein, or any combination or portion of those actions. The Contractor and the Surety shall be liable to the District for

any cost incurred by the District in those actions and the District has the right to deduct the cost thereof from any payment then or thereafter due the Contractor.

3. ARCHITECT

3.1. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District to, among other things, observe the progress and quality of the Work on behalf of the District.

3.2. Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to insure the proper execution of the Contract and if Work is defective or does not conform to the requirements of the Contract Documents. Whenever the Architect considers it necessary or advisable, for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspections or testing of the Work, whether or not such Work is fabricated, installed or completed. Neither this authority of the Architect nor a decision made in good faith by the Architect to exercise or not to exercise that authority shall give rise to a duty or responsibility to the Contractor, Subcontractors, material suppliers, their agents or employees, or other persons performing portions of the Work.

3.3. Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.4. Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.5. Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1. If a Construction Manager is used on this Project, the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2. Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to the Contractor, any Subcontractor, their agents, employees, or other persons performing any of the Work. Construction Manager shall have free access to all parts of Work at any time.

4.3. If the District does not use a Construction Manager on this Project, all references to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS AND TESTS

5.1. Project Inspector

5.1.1. One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

5.1.2. No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials. Inspection of Work shall not relieve Contractor from the obligation to fulfill the Contract. Project Inspector(s) and the DSA are authorized to stop work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

5.1.3. If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

5.1.4. **Limitations on Project Inspector Authority**. The Project Inspector does not have authority to interpret the Contract Documents or to modify the Work depicted in the Contract Documents. No Work inconsistent with the Contract Documents shall be performed solely on the basis of the direction of the Project Inspector, and the Contractor shall be liable to the District for the consequences of all Work performed on such basis.

5.2. <u>Tests and Inspections</u>

5.2.1. Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

5.2.2. If the Contract Documents, laws, ordinances or any public authority with jurisdiction over the Work requires the Work, or any portion thereof, to be specially tested, inspected or approved, the Contractor shall give the Architect, the Construction Manager and the Project Inspector written notice of the readiness of such Work for observation, testing or inspection at least seventy-two (72) hours prior to the time for the conducting of such test, inspection or observation. If inspection, testing or observation is by authority other than the District, the Contractor shall inform the Project Inspector and the Construction Manager not less than seventy-two (72) hours prior to the date fixed for such inspection, test or observation. The Contractor shall not cover up any portion of the Work subject to tests, inspections or observations prior to the completion and satisfaction of the requirements of such test, inspection or observation. In the event that any portion of the Work subject to tests, inspection or approval shall be covered up by Contractor prior to completion and satisfaction of the requirements of such tests, inspection or approval, Contractor shall be responsible for the uncovering of such portion of the Work as is necessary for performing such tests, inspection or approval without adjustment of the Contract Price or the Contract Time on account thereof.

5.2.3. The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

5.2.4. The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents, that must by terms of the Contract Documents be tested, in order that the District may arrange for the testing of same at the source

of supply. This notice shall be, at a minimum, seventy-two (72) hours prior to the manufacture of the material that must be tested.

5.2.5. Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed required testing and inspection or prior to the receipt of notice from the representative that testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

5.2.6. The District will select and pay testing laboratory costs for all tests and inspections. Costs of tests of any materials found to be not in compliance with the Contract Documents shall be paid for by the District and reimbursed by the Contractor or deducted from the Contract Price.

5.3. Costs for After Hours and/or Off Site Inspections

5.3.1. If the Contractor performs Work outside the Inspector's regular working hours, over a period of more than eight (8) hours per day by any single person, on weekends/holidays or requests the Inspector to perform inspections off Site, then the costs of any inspections required outside regular working hours, over a period of more than eight (8) hours per day by any single person, on weekends/holidays or off Site, shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

Contractor shall construct the Work for the Contract price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits, fees, licenses, facilities, transportation, taxes, and services necessary for the proper execution and Completion of the Work, except as indicated herein.

6.1. Status of Contractor

6.1.1. Contractor is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. Contractor assumes exclusively the responsibility for the acts of its employees as they relate to the services to be provided during the course and scope of their employment. Contractor, its Subcontractors, agents, and its employees shall not be entitled to any rights or privileges of District employees. District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of the Contract.

6.1.2. As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractor's State License Board, located at 9821 Business Park Drive, , Sacramento, California 95827, with a mailing address of Post Office Box 26000, Sacramento, California, and with a website at http://www.cslb.ca.gov.

6.2. Contractor's Supervision

6.2.1. During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, a competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

6.2.2. The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

6.2.3. Before commencing the Work, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District, unless the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, District, any of the District's employees, agents, the Construction Manager, or the Architect, in which case, Contractor shall notify District in writing. District retains the right to reasonably refuse Contractor's replacement personnel The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

6.2.4. Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

6.2.5. The Contractor's project manager shall devote sufficient time to the Project on site, and in the Contractor's home office to pre-plan activities to meet the Construction Schedule and fulfill all Contract obligations. This includes making timely submittals, issuing and disseminating necessary RFI's, promptly processing and distributing bulletins, change orders and payments, keeping required logs current etc. If any of these activities fall behind contract requirements or dates necessary to complete the Project on time, the Contractor must provide a full time project manager on the Project Site dedicated solely to the Project, until the deficiencies are corrected.

6.2.6. The Contractor shall verify all indicated dimensions before ordering materials or equipment, or before performing Work. The Contractor shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Project Documents before commencing work. Errors, inconsistencies or omissions discovered shall be immediately reported to the District. Upon commencement of any item of Work, the Contractor shall be responsible for dimensions related to the Work and shall make any corrections necessary to make Work properly fit at no additional cost to District. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to subcontractors or agents.

6.2.7. Omissions from the Drawings or Specifications, or the misdescription of details of Work which are manifestly necessary to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed Work, but they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

6.2.8. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.3. <u>Duty to Provide Fit Workers</u>

6.3.1. Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

6.3.2. **COVID-19**. Contractor shall ensure that all its employees and employees of its subcontractors shall comply with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any

similar virus or derivative strain.

6.3.3. Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

6.3.4. The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

6.3.5. If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District. The District shall determine if Contractor's intended change is permissible while performing the Contract.

6.3.6. Compliance with Immigration Reform and Control Act of 1986. As required by law, Contractor and all Subcontractors shall employ individuals for the Work in conformity with the Immigration Reform and Control Act of 1986, 8 USC §§1101 et seq.

6.4. <u>Personnel</u>

6.4.1. Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. The District will not permit any (1) verbal or physical contact with neighbors, students, and faculty; (2) profanity, or inappropriate attire or behavior; (3) photographing, videoing, or audio recording of any neighbors, students, and faculty or any posting of any photographs, videos, or audio recordings of any neighbors, students, and faculty on any internet site, social media platform of any kind, regardless of source of any photograph, video, or audio recording. District may require Contractor to permanently remove noncomplying persons from Project Site.

6.4.2. The Contractor shall employ a full-time superintendent and necessary assistants who shall have complete authority to represent and act on behalf on the Contractor on all matters pertaining to the Work. The superintendent shall be competent and have a minimum of five (5) years' experience in construction supervision on projects of similar scale and complexity. The superintendent shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable to the District. The superintendent shall not be changed without the written consent of the District unless the superintendent ceases to be employed by the Contractor.

6.4.3. The Contractor shall employ a competent estimator and necessary assistants, or contact for sufficient services of an estimating consultant and to process proposed change orders. The estimator shall have a minimum of five (5) years' experience in estimating. The estimator shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable. The Contractor shall submit PCO's requested by the District within fourteen (14) calendar days.

6.4.4. The Contractor shall employ a competent scheduler and necessary assistants, or contract for sufficient services of a scheduling consultant. The scheduler shall have a minimum of five (5) years' experience in scheduling. The scheduler shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable.

6.4.5. Contractor shall at all times enforce strict discipline and good order among Contractor's employees, and shall not employ on the Project any unfit person or anyone not skilled in the task assigned.

6.4.6. If Contractor or any Subcontractor on the Project site fails to comply with any provision herein, the District may have the offending person(s) immediately removed from the Site, and the person(s) shall be replaced within three (3) days, at no additional expense to the District. Contractor, on behalf of it and

its Subcontractors, hereby waives any claim that the provisions of this paragraph or the enforcement thereof interferes, or has the potential to interfere, with its right to control the means and methods of its performance and duties under this Contract.

6.5. Prohibition on Harassment

6.5.1. In addition to the non-discrimination requirements in the Contract Documents, the Contractor and all Subcontractors must comply with these provisions prohibiting harassment at the Site. The District is committed to providing a campus and workplace free of sexual harassment and harassment based on factors such as race, color religion, national origin, ancestry, age, medical condition, marital status, disability or veteran status. Harassment includes without limitation, verbal, physical or visual conduct which creates an intimidating, offensive or hostile environment such as racial slurs; ethnic jokes; posting of offensive statements, posters or cartoons or similar conduct. Sexual harassment includes without limitation the solicitation of sexual favors, unwelcome sexual advances, or other verbal, visual or physical conduct of a sexual nature.

6.5.2. Contractor shall take all reasonable steps to prevent harassment from occurring, including without limitation affirmatively raising the subject of harassment among its employees, expressing strong disapproval of any form of harassment, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment and informing complainants of the outcome of an investigation into a harassment claim.

6.5.3. Contractor shall not permit any person, whether employed by Contractor or a Subcontractor or any other person or entity, performing any Work at or about the Site to engage in any prohibited form of harassment. Any person performing or providing Work on or about the Site engaging in a prohibited form of harassment directed to any student, faculty member or staff of the District or directed to any other person on or about the Site shall be subject to immediate removal and shall be prohibited thereafter from providing or performing any portion of the Work. Upon the District's receipt of any notice or complaint that any person employed directly or indirectly by Contractor on any Subcontractor in performing or providing the Work has engaged in a prohibited form of harassment, the District will promptly undertake an investigation of such notice or complaint. In the event that the District, after such investigation, reasonably determines that a prohibited form of harassment has occurred, the District shall promptly notify the Contractor of the same and direct that the person engaging in such conduct be immediately removed from the Site. Unless the District's determination that a prohibited form of harassment has occurred is grossly negligent or without reasonable cause, District shall have no liability for directing the removal of any person determined to have engaged in a prohibited form of harassment nor shall the Contract Price or the Contract Time be adjusted on account thereof. The indemnity provisions of the Contract Documents apply to any assertion by any person dismissed from performing or providing work at the direction of the District pursuant to this provision; or (ii) the assertion by any person that any person directly or indirectly under the employment or direction of the Contractor has engaged in a prohibited form of harassment directed to or affecting such person. The obligations of the Contractor and the Surety under the preceding sentence are in addition to, and not in lieu of, any other obligation of defense, indemnity and hold harmless whether arising under the Contract Documents, at law or otherwise; these obligations survive completion of the Work or the termination of the Contract.

6.6. Conferences and Meetings.

6.6.1. In addition to the conference and meeting requirements in the Specifications, Contractor's supervisory personnel for the Work and the Contractor's management personnel shall attend all required meetings as required by the Contract Documents or as requested by the District. The Contractor's personnel participating in conferences and meetings relating to the Work shall be authorized to act on behalf of the Contractor and to bind the Contractor. The Contractor is solely responsible for arranging for the attendance by Subcontractors and Material Suppliers at meetings and conferences relating to the Work as necessary, appropriate or as requested by the District.

6.6.2. Preconstruction Conference. The Contractor's representatives (and representatives of Subcontractors as requested by the District) shall attend a preconstruction conference at such time and place as designated by the District. The preconstruction conference will generally address the requirements of the Work and Contract Documents, and to establish construction procedures. Subject matters of the preconstruction conference will include as appropriate: (a) administrative matters, including an overview of the respective responsibilities of the District, Architect, Construction Manager, Contractor, Subcontractors, Project Inspector, and others performing any part of the Work or services relating to the Work; (b) Submittals; (c) Changes; (d) employment practices, including Certified Payroll preparation and submission and prevailing wage rate responsibilities of the Contractor and Subcontractors; (e) Progress Schedule development and maintenance; (f) development of Schedule of Values and payment procedures; (g) implementation of BIM, if applicable; (h) communication procedures, including the handling of Requests for Information; (i) emergency and safety procedures; (j) Site visitor policies; (k) conduct of Contractor/Subcontractor personnel at the Site; and (l) Completion, Punchlist and closeout procedures.

6.6.3. Progress Meetings. Progress meetings will be conducted on regular intervals (weekly unless otherwise expressly indicated elsewhere in the Contract Documents). The Contractor's representatives and representatives of Subcontractors (as requested by the District) shall attend progress meetings. Progress Meetings will be chaired by the District or the Construction Manager and will generally include as agenda items: Site safety, field issues, coordination of Work, construction progress and impacts to timely Completion, if any. The purposes of the progress meetings include: a formal and regular forum for discussion of the status and progress of the Work by all Project participants, a review of progress or resolution of previously raised issues and action items assigned to the Project participants, and reviews of the Progress schedule and submittals. Contractor shall prepare and submit at each progress meeting a three (3) week look-ahead schedule identifying all planned activities for the next three (3) weeks and any deviations from activities in the current Construction Schedule.

6.6.4. Special Meetings. As deemed necessary or appropriate by the District, special meetings will be conducted with the participation of the Contractor, Subcontractors and other Project participants as requested by the District.

6.6.5. Minutes of Meetings. following conclusion of the preconstruction conference, progress meetings and special meetings, the Architect or the Construction Manager will prepare and distribute minutes reflecting the items addressed and actions taken at a meeting or conference. Unless the Contractor notifies the Architect and the Construction Manager in writing of objections or corrections to minutes prepared hereunder within five (5) days of the date of distribution of the minutes, the minutes as distributed shall constitute the official record of the meeting or conference. No objections or corrections of any Subcontractor or Material Supplier shall be submitted directly to the Architect or the Construction Manager; such objections or corrections shall be submitted to the Architect and the Construction Manager through the Contractor. If the Contractor timely interposes objections or notes corrections, the resolution of such matters shall be addressed at the next scheduled progress meeting.

6.7. <u>Purchase of Materials and Equipment</u>

6.7.1. The Contractor is required to order and obtain materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to ensure against price escalations or delays. All materials and equipment shall be stored on-Site and secured by Contractor unless otherwise approved in writing by the District.

6.7.2. Off-Site Storage of Materials and Equipment Only Upon District's Written Consent. If Contractor intends to store materials and/or equipment off site after District has paid for those materials and/or equipment, Contractor must first obtain the District's express, written consent. If Contractor receives District's consent to store materials and/or equipment off site ("Stored Materials"), Contractor shall comply with all of the following:

6.7.2.1. Property of Others Insurance. Contractor shall procure and maintain, during the entire time Stored Materials are in off-site storage, insurance coverage acceptable to the District that shall protect Contractor and District from all claims for Stored Materials that are lost, stolen, or damaged. The District shall be named as a loss payee for this insurance coverage. The insurance coverage shall include a "loss payable endorsement" stating that all amounts payable will be paid as a joint-check to the Contractor and District. If approved in advance by District, this required insurance may be obtained by an "Employee Theft Protection Insurance Policy" or an "Employee Theft Protection Bond."

6.7.2.2. Payment for Stored Materials. District shall only make payment to Contractor for Stored Materials if agreed upon in advance, in writing, by the District and provided that Contractor submits an itemized list of all Stored Materials with Contractor's Application for Payment. Contractor's itemized list of all Stored Materials shall be supported by all of the following:

6.7.2.2.1. Itemized breakdown of the Stored Materials for the purpose of requesting partial payment, identifying the serial numbers and exact storage location of each piece of equipment and material; and

6.7.2.2.2. Verified invoices for the Stored Materials; and

6.7.2.2.3. Original copy of Property of Others Insurance, Employee Theft Protection Insurance Policy, or an Employee Theft Protection Bond based on the type of insurance required by the District. These documents shall include certificates and endorsements stating the coverage and that the District is a loss payee or obligee, as appropriate.

6.7.2.2.4. An express, signed document from Contractor indicating that the District may, at any time and at its sole discretion, have unhindered and unqualified access to all Stored Materials and to remove the Stored Materials.

6.8. Documents on Work

6.8.1. Contractor shall at all times keep on the Work Site, or at another location as the District may authorize in writing, one legible copy of all Contract Documents, including Addenda and Change Orders, and current titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the California Building Standards Code (electronic versions are acceptable), all approved Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of these titles as they relate to this Project. (See particularly the duties of Contractor, title 24, part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of title 24.

6.8.2. Daily Job Reports.

6.8.2.1. Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

6.8.2.1.1. A brief description of all Work performed on that day.

6.8.2.1.2. A summary of all other pertinent events and/or occurrences on that day.

6.8.2.1.3. The weather conditions on that day.

6.8.2.1.4. A list of all Subcontractor(s) working on that day,

6.8.2.1.5. A list of each Contractor employee working on that day and the total hours worked for each employee.

6.8.2.1.6. A complete list of all equipment on Site that day, whether in use or not.

6.8.2.1.7. A complete list of all materials, supplies, and equipment delivered on that day.

6.8.2.1.8. A complete list of all inspections and tests performed on that day.

6.8.2.2. Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the District's Construction Manager.

6.9. Preservation of Records

District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. Contractor shall make available at its office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

6.10. Integration of Work

6.10.1. Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

6.10.2. All cost caused by defective or ill-timed Work shall be borne by Contractor, inclusive of repair work.

6.10.3. Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with written consent of District.

6.11. Obtaining of Permits and Licenses

6.11.1. Contractor shall secure and pay for all permits, licenses, and certificates. Contractor must review the Special Conditions for any changes or exceptions to this provision.

6.12. Work to Comply with Applicable Laws and Regulations

6.12.1. Contractor shall give all notices and comply with all applicable laws, ordinances, rules, and regulations relating to the Work, including the specific laws, ordinances, rules, and regulations as indicated and specified in the Contract Documents and identified below, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that will result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

6.12.1.1. National Electrical Safety Code, U. S. Department of Commerce

6.12.1.2. National Board of Fire Underwriters' Regulations

6.12.1.3. California Building Standards Code , latest addition, and the California Code of Regulations, Title 24, including amendments

6.12.1.4. Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

6.12.1.5. Industrial Accident Commission's Safety Orders, State of California

6.12.1.6. Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

6.12.1.7. Americans with Disabilities Act

6.12.1.8. Education Code of the State of California

6.12.1.9. Government Code of the State of California

6.12.1.10. Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

6.12.1.11. Public Contract Code of the State of California

6.12.1.12. California Art Preservation Act

6.12.1.13. U. S. Copyright Act

6.12.1.14. U. S. Visual Artists Rights Act

6.12.2. Contractor shall comply will all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act ("CEQA") (Public Resources Code sections 21000 et. seq.) (Also see the Special Conditions.)

6.12.3. If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom.

6.12.4. Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies.

6.13. Safety/Protection of Persons and Property

6.13.1. Contractor will be solely and completely responsible for conditions of the Work Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

6.13.2. COVID-19. Contractor is responsible for complying with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).

6.13.3. The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

6.13.4. Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Work Site.

6.13.5. Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

6.13.6. Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

6.13.7. Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the performance of the Contract and shall take all necessary measures and be responsible for the proper care and completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

6.13.8. Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project and shall comply with all applicable federal, state, local, and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction.

6.13.9. Hazards Control. Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

6.13.10. Contractor shall designate a responsible member of its organization on the Project, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety, and health of workers. Name and position of person so designated shall be reported to District by Contractor.

6.13.11. Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, Contractor shall correct such violation promptly.

6.13.12. Storm Water. Contractor shall comply with the District's Storm Water Pollution Prevention Plan

(SWPPP) and, if indicated in the Special Conditions, shall be the District's Qualified SWPPP Practitioner, at no additional cost to the District.

6.13.13. In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

6.13.14. All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. The District reserves the right to designate certain items of value that shall be turned over to the District.

6.13.15. All connections to public utilities and/or existing on-site services shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.13.16. Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

6.13.17. Contractor shall protect and preserve the Work from all damage or accident, providing temporary roofs, window and door coverings, boxing, or other construction as needed. Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, materials, equipment, furnishings, and/or improvements in working areas; and shall provide adequate protection therefor. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at its expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

6.13.18. Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property, and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

6.13.19. Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of the District, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and require that all workers comply with all regulations while on Project Site.

6.13.20. Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

6.13.21. In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to entering the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.13.22. Infectious Disease Compliance Provisions

6.13.22.1. **Compliance with Orders.** Contractor and its Subcontractors, agents and employees thereof, are responsible for complying with all applicable and existing federal, State, and/or local statutes, orders, rules, regulations, ordinances, and/or directives in any way relating to construction site safety, the Work, the Project, and Site, in connection with any infectious and communicable disease in any form, whether bacterial or viral, including, without limitation, MSRA, influenza, COVID-19, and/or any similar virus or derivative strain ("**Infectious Disease(s)**"). Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all these requirements to ensure full compliance on Site and the Work. Contractor's obligations hereunder shall include, without limitation providing personal protective equipment ("PPE") to its employees and to ensure that its subcontractors provide PPE equipment to its employees to prevent the spread of an Infectious Disease at the Project Site(s).

6.13.22.2. **Infectious Disease and Contract Time.** Contractor agrees that the Contract Time is based on Contractor's full compliance with all applicable and existing federal, State, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety, the Work, the Project, and the Site in connection with an Infectious Disease. Any dispute concerning the Contract Time in connection with any delay associated with an Infectious Disease shall be resolved pursuant to the Claims procedures in these General Conditions.

6.13.22.3. **Infectious Disease Release.** Contractor acknowledges that it is voluntarily and freely entering into the Contract for this Project and deciding to perform the Work which will require Contractor to enter upon and into the Site and that Contractor use of the Site includes the possible exposure to and illness from an Infectious Disease. Contractor further acknowledges the dangers involved and with full knowledge of these dangers, voluntarily agrees to assume all risks of bodily injury, death, or property damage, whether those risks are known or unknown. Contractor hereby releases District, its agents, representatives, officers, consultants, employees, trustees, and volunteers from any and all liabilities, causes of action, lawsuits, claims, demands, or damages of any kind whatsoever that Contractor, its staff, participants, relatives, children, spouse, partner, household members, family members, employees, guests, invitees, volunteers, agents, consultants, Subcontractors, and any other person tracing exposure or illness to Contractor, now have, or may have in the future, for injury, trauma, illness, loss, unwanted contact, harassment, disability, death or property damages related to being exposed to or contracting an Infectious Disease while using the Site for the performance of the Work. Contractor shall include this paragraph in all subcontracts with Subcontractors.

6.13.22.4. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).

6.13.22.5. Any cost to comply with these "Infectious Disease Compliance Provisions" shall be at Contractor's sole expense and expense, but may be included in the Contract Price.

6.13.23. **Photos, Videos and Use of Drones**.

6.13.23.1. Contractor may photograph or video the progress of the Work and shall provide all of those photos and videos to the District at the District's request. Contractor may utilize drones or similar aerial equipment to photograph, video or monitor the progress of the Work and for security purposes, but Contractor must comply with all legal requirements of the federal government, the State of California, and the County and City in which the Project is located, applicable to the use of drones or similar aerial equipment. In addition, Contractor shall ensure that no photographs, videos or digital recordings of any kind are taken of District students or staff.

6.13.23.2. If Contractor utilizes drones or any other unmanned aircraft during construction operations, Contractor must either ensure its insurance coverage includes

unmanned aircraft operations or procure and maintain a separate aircraft liability policy to cover unmanned aircraft operations.

6.14. Working Evenings and Weekends

Contractor may be required to work evenings and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's written approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any Inspector and custodial charges necessitated by the Contractor's evening and/or weekend work.

6.15. Noise and Dust Control

6.15.1. In addition to the noise control, dust control and related requirements in the Specifications, Contractor shall control the noise and dust at the Site as indicated here.

6.15.2. Noise Control. The Contractor shall install noise reducing devices on construction equipment. Contractor shall comply with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction equipment noise at the Site shall be limited as required by applicable law, rule or regulation. If classes are in session at any point during the progress of the Work, and, in the District's reasonable discretion, the noise from any Work disrupts or disturbs the students or faculty or the normal operation of the school at the Site, at the District's request, the Contractor shall schedule the performance of that Work around normal school hours or make other arrangements so that the Work does not cause disruption or disturbance. In no event shall those arrangements result in adjustment of the Contract Price or the Contract Time.

6.15.3. Dust Control. The Contractor shall be fully and solely responsible for maintaining and upkeeping all areas of the Site and adjoining areas, outdoors and indoors, free from flying debris, grinding powder, sawdust, dirt and dust as well as any other product, product waste or work waste, that by becoming airborne may cause respiratory inconveniences to persons, particularly to students and District personnel. Additionally, the Contractor shall take specific care to avoid deposits of airborne dust or airborne elements. Those protection devices, systems or methods shall be in accordance with the regulations set forth by the EPA and OSHA, and other applicable law, rule or regulation. Additionally, the Contractor shall be responsible to regularly and routinely clean up and remove any and all deposits of dust and other elements. Damage and/or any liability derived from the Contractor's failure to comply with these requirements shall be exclusively at the cost of the Contractor, including, without limitation, any and all penalties that may be incurred for violations of applicable law, rule or regulation, and any amounts expended by the District to pay such damages shall be due and payable to the District on demand. Contractor shall replace any damages property or part thereof and professionally clean any and all items that become covered or partially covered to any degree by dust or other airborne elements. If classes are in session at any point during the progress of Work, and, in the District's reasonable discretion, flying debris, grinding powder, sawdust, dirt or dust from any Work disrupts or disturbs the students or faculty or the normal operation of the school, at the District's request, the Contractor shall schedule the performance of all that Work around normal school hours and make other arrangements so that the Work does not cause disruption or disturbance. In no event shall those arrangements result in adjustment of the Contract Price or the Contract Time.

6.15.4. Contractor Failure to Comply. If the Contractor fails to comply with the requirements for dust control, noise control, or any other maintenance or clean up requirement of the Contract Documents, the District, Architect, Project Inspector, or Construction Manager shall notify the Contractor in writing and the Contractor shall take immediate action. Should the Contractor fail to respond with immediate and responsive action and not later than twenty-four (24) hours from that notification, the District shall have the absolute right to proceed as it may deem necessary to remedy such matter. Any and all costs incurred

by the District in connection with those actions shall be the sole responsibility of, and be borne by, the Contractor; the District may deduct those amounts from the Contract Price then or thereafter due the Contractor.

6.16. Cleaning Up

6.16.1. The Contractor shall provide all services, labor, materials, and equipment necessary for protecting the Work, all school occupants, furnishings, equipment, and building structure from damage until its Completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At Completion of the Work and portions thereof, Contractor shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

6.16.2. Contractor at all times shall keep Premises free from debris such as waste, rubbish, and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises, but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for the continuing education process. Contractor shall comply with all related provisions of the Specifications.

6.16.3. If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

6.16.4. Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District will then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price, or District may withhold those amounts from payment(s) to Contractor.

7. SUBCONTRACTORS

7.1. Contractor shall provide the District with information for all Subcontracts as required in the Contractor's Submittals and Schedules Section.

7.2. No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of the Contract.

7.3. Contractor agrees to bind every Subcontractor by terms of the Contract as far as those terms are applicable to Subcontractor's work. If Contractor shall subcontract any part of the Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

7.4. District's consent to, or approval of, or failure to object to, any Subcontractor under the Contract shall not in any way relieve Contractor of any obligations under the Contract and no such consent shall be deemed to waive any provisions of the Contract.

7.5. Contractor acknowledges sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and shall comply with all applicable requirements

therein. In addition, Contractor acknowledges sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and shall comply with all applicable requirements therein all including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

7.6. No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100, et seq, of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, either:

7.6.1. Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

7.6.2. Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

7.6.3. Sublet or subcontract any portion of the Work in excess of one-half of one percent (1/2 of 1%) of the Contractor's total bid as to which his original bid did not designate a Subcontractor.

7.7. The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

7.8. Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

7.9. Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

8. OTHER CONTRACTS/CONTRACTORS

8.1. District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with other portions of the Project or other construction or operations at or about the Site. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

8.2. In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Site.

8.3. If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, Contractor shall inspect and promptly report to the District in writing before proceeding with its Work any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work.

8.4. To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

8.5. Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in completion of the Project to the end that

Contractor may perform this Contract in light of the other contracts, if any.

8.6. Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. The District shall have complete access to the Project Site for any reasonable purpose at all times. Contractor shall not cause any unnecessary hindrance or delay to the use and/or school operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or school operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

9. DRAWINGS AND SPECIFICATIONS

9.1. A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

9.2. Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

9.3. Trade Name or Trade Term. It is not the intention of the Contract to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of "trade name" or "trade term" shall be considered sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

9.4. The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

9.5. Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

9.6. In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

9.7. Drawings and Specifications are intended to comply with all laws, ordinances, rules, and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

9.8. Ownership of Drawings

9.8.1. All copies of the Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at Completion of Work, or may be used by District as it may require without any additional costs to District. Neither the Contractor nor any

Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

Contractor's submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals. No submittal, unless approved in writing by the District as acceptable and complete, shall be a Contract Document.

10.1. Schedules, Safety Plan and Complete Subcontractor List

10.1.1. Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Notice to Proceed or in the Special Conditions), Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

10.1.1.1. Schedule of Work. Contractor shall provide a preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task, all contract milestones and each milestone's completion date(s) as may be required by the District, and the date of Project Completion.

10.1.1.1.1. Proposed Advanced Schedule. The District is not required to accept an early completion ("advanced") schedule; i.e., one that shows early completion dates for the Contract completion or milestones. Contractor shall not be entitled to extra compensation if the District allows the Contractor to proceed performing the Contract on an earlier ("advanced") schedule and Contractor completes the Project, for whatever reason, beyond the date shown in that earlier ("advanced") schedule, but within the Time for Completion indicated in the Contract. A schedule showing the work completed in less than the Time for Completion indicated in the Contract, shall be considered to have Project Float.

10.1.1.1.2. Float or Slack in the Schedule. Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

10.1.1.2. Schedule of Submittals. The Contractor shall provide a preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule.

10.1.1.3. Schedule of Values. The Contractor shall provide a preliminary schedule of values for all component parts of the Work for which progress payments may be requested. The schedule of values must include quantities and prices of items totaling the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. The preliminary schedule of values should include, at a minimum, the following information and the following structure:

10.1.1.3.1. Divided into at least the following categories:

10.1.1.3.1.1. Overhead and profit;
10.1.1.3.1.2. Supervision;
10.1.1.3.1.3. General conditions;
10.1.1.3.1.4. Layout;
10.1.1.3.1.5. Mobilization;
10.1.1.3.1.6. Submittals;
10.1.1.3.1.7. Bonds and insurance;
10.1.1.3.1.8. Closeout documentation;
10.1.1.3.1.9. Demolition;
10.1.1.3.1.10. Installation;
10.1.1.3.1.11. Rough-in;
10.1.1.3.1.12. Finishes;
10.1.1.3.1.13. Testing;
10.1.1.3.1.14. Punch List and acceptance.

10.1.1.3.2. Divided by each of the following areas:

10.1.1.3.2.1. Site work;
10.1.1.3.2.2. By each building;
10.1.1.3.2.3. By each floor.

10.1.1.3.3. The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

10.1.1.3.3.1. Mobilization and layout combined to equal not more than 1%;
10.1.1.3.3.2. Submittals, samples and shop drawings combined to equal not more than 3%,
10.1.1.3.3.3. Bonds and insurance combined to equal not more than 2%.

10.1.1.3.4. Closeout Documentation. Closeout Documentation shall have a value in the preliminary schedule of not less than 5%. The value for Closeout Documentation shall be in addition to and shall not be a part of the Contract retention.

10.1.1.3.5. All items on the Schedule of Values must have a specific completion date on the Construction Schedule, or District has approved the Construction Schedule and the Construction Schedule is fully cost-loaded and resource-loaded, unless waived by the District in writing, and detailed as required by the Contract Documents

10.1.1.3.6. Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

10.1.1.3.7. Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior written consent and approval of the District,

which may be granted or withheld in the sole discretion of the District.

10.1.1.3.8. Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Schedule of Values, shall be paid by the District in installments, based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.3.9. The Contractor shall not "front-load" the Schedule of Values with false dollar amounts for activities to be performed in the early stages of the Project. The District may, in its sole discretion, utilize the costs listed in the Schedule of Values as the true cost of items to be deducted from the Contract Price through credit or deductive Change Order. The values for each line item shall include the amount of overhead and profit applicable to each item of work and shall include, at a minimum, a breakdown between rough and finish Work for the basic trades as well as individual dollar figures for large dollar equipment and materials to be installed or furnished for the Project. No individual line item or scope of work in the Schedule of Values shall exceed $50,000, except with the express, written consent of the District. Exceptions will be given by the District for a single item of Equipment for which the true cost exceeds $50,000. The Schedule of Values shall be subject to the District's review and approval of the form and content thereof. Upon request, Contractor shall provide District with data and documentation substantiating the accuracy of the proposed line items. In the event that the District shall reasonably object to any portion of the Schedule of Values, within ten (10) days of the District's receipt of the Schedule of Values, the District shall notify the Contractor, in writing of the District's objection(s) to the Schedule of Values together with any request for substantiating data or documentation. Within five (5) days of the date of the District's written objection(s) and request for substantiating data and documentation, Contractor shall submit a revised Schedule of Values to the District for review and approval together with the requested data and documentation. The foregoing procedure for the preparation, review and approval of the Schedule of Values shall continue until the District has approved of the entirety of the Schedule of Values. Once the Schedule of Values is approved by the District, the Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole reasonable discretion of the District. Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision and general conditions costs and profit, as such items are reflected in the Schedule of Values, shall be made incrementally as included in the activities included in the Approved Construction Schedule.

10.1.1.4. **Safety Plan.** The Contractor shall provide a preliminary Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

10.1.1.4.1. All applicable requirements of California Division of Industrial Safety ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

10.1.1.4.2. All provisions regarding Project safety, including all applicable provisions in these General Conditions.

10.1.1.4.3. Contractor's Safety Plan shall be prepared in both English and in the predominant language(s) of the Contractor's and its Subcontractors' employees.

10.1.1.5. **Complete Subcontractor List.** Contractor shall provide a preliminary Subcontractor List stating the name, address, telephone number, facsimile number, email address, California State Contractors License number, Department of Industrial Relations

registration number, classification, and monetary value of all Subcontracts for parties furnishing labor, material, or equipment for the Project.

10.1.2. Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project, Primavera, or substantially similar product) approved in advance by the District.

10.1.3. The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.1.4. The District shall have the right at any time to revise the Schedule of Values if, in the District's sole opinion, the Schedule of Values does not accurately reflect the value of the Work performed.

10.1.5. All submittals and schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.2. Monthly Progress Schedule(s)

10.2.1. Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed. The Monthly Progress Schedule shall be sent to the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

10.2.2. Contractor shall also submit Monthly Progress Schedule(s) with all payment applications.

10.3. Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Work Site for any material requiring a Material Safety Data Sheet per the Federal "Hazard Communication" standard, or employees right to know law. The Contractor is also required to ensure proper labeling on substances brought onto the Project Site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10.4. Logistic Plan

Contractor shall provide a staging and logistics plan identifying laydown areas, loading and unloading areas, crane locations, fence locations, temporary utility connections, trailer locations, and emergency evacuation meeting area. This Logistics Plan must be approved by the District prior to the Contractor mobilizing on the Site.

10.5. Information Included in Submittals.

All Submittals shall be accompanied by a written transmittal and each set of plans shall carry a "wet stamp" or other writing by the Contractor providing an identification of the portion of the Drawings or the Specifications pertaining to the Submittal, with each Submittal numbered consecutively for ease of reference along with the following information: (i) date of submission; (ii) Project name; (iii) name of submitting Subcontractor; and (iv) if applicable, the revision number. The foregoing information is in addition to, and not in lieu of, any other information required for the District's review, evaluation and approval of the Contractor's Submittals. Each Submittal shall be complete with its required number of

copies, no piecemeal documentation is allowed. Any Submittal not bearing the required wet stamp as stated herein, shall be rejected until the appropriate wet stamp information is provided on each submittal.

10.6. Verification of Submittal Information.

By approving and submission of Submittals, the Contractor represents to the District and Architect that the Contractor has determined and verified materials, field measurements, field construction criteria, catalog numbers and similar data related thereto and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents. Each Submittal shall include the following certification duly executed by the Contractor's superintendent or project manager for the Work: "The Contractor has reviewed and approved the field dimensions and construction criteria of the attached Submittal. The Contractor has verified that the Submittal is complete and includes notations of any portion of the Work depicted in the Submittal which is not in strict conformity with the Contract Documents. The information in the attached Submittal has been reviewed and coordinated by the Contractor with information included in other Submittals."

10.7. Contractor Responsibility for Deviations.

The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the District's and Architect's review of Submittals unless the Contractor has specifically informed the District in writing of such deviation at the time of submission of the Submittal and the District has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the District's and Architect's review or comments thereon.

10.8. No Performance of Work Without Architect Review.

The Contractor shall perform no portion of the Work requiring the District's and Architect's review of Submittals until the District and Architect have completed their review and returned the Submittal to the Contractor indicating "No Exception Taken" to that Submittal. The Contractor shall not perform any portion of the Work forming a part of a Submittal or which is affected by a related Submittal until the entirety of the Submittal or other related Submittal has been fully processed. All Work shall be in accordance with the final action taken by the District and the Architect review in review of Submittals and other applicable portions of the Contract Documents.

10.9. District and Architect Review of Submittals.

The purpose of the District's and Architect's review of Submittals and the time for the District's and Architect's return of Submittals to the Contractor shall be as set forth elsewhere in the Contract Documents. If the District and/or Architect return a Submittal as rejected or requiring correction(s) with re-submission, the Contractor, so as not to delay the progress of the Work, shall promptly thereafter resubmit a Submittal conforming to the requirements of the Contract Documents; the resubmitted Submittal shall indicate the portions thereof modified in accordance with the District's and Architect's direction. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the District shall be entitled to rely upon the accuracy and completeness of the Contractor's calculations and certifications accompanying Submittals. The District's and Architect's review of the Submittals is for the limited purposes described in the Contract Documents. The District and Architect will review each Submittal twice. Should additional Submittals be required as a result of failure of the Contractor to address comments, the Contractor will pay for the Architect's services on a time and material basis for each subsequent review.

10.10. Deferred Approval Items.

In the event that any portion of the Work is designated in the Contract Documents as a "Deferred Approval" item from DSA, Contractor shall be solely and exclusively responsible for the preparation of Submittals for such item(s) in a timely manner so as not to delay or hinder the completion of the Work within the Contract Time. All work, labor, materials, equipment or services necessary to complete the design, engineering and permitting/approval of the Deferred Approval items shall be provided by the Contractor without adjustment of the Contract Price or the Contract Time.

10.11. Contractor Responsibility for Deviations

The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the District's or Architect's review of Submittals unless the Contractor has specifically informed the District and the Architect in writing of such deviation at the time of submission of the Submittal and the District and the Architect have given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the District's or the Architect's review or comments thereon.

11. SITE ACCESS, CONDITIONS AND REQUIREMENTS

11.1. Site Investigation

Before bidding on the Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in the Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

11.2. Soils Investigation Report

11.2.1. When a soils investigation report obtained from test holes at Site is available, that report shall be available to the Contractor but shall not be a part of the Contract. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of the Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it made visual examination of Site and made whatever tests Contractor deems appropriate to determine underground condition of soil.

11.2.2. If a soils report is identified in the Contract Documents, it is not a Contract Document. Further, no representation is made by District that information provided is adequate for purposes of construction of the Project. District disclaims responsibility for any and all interpretations made by the Contractor of any soil or subsurface condition for information, such as soil-bearing values, rock profiles, presence and scope of boulders and cobbles, soil stability and the presence or level and extent of underground water.

11.2.3. The Contractor shall determine the means, methods, techniques and sequences necessary to achieve required soil contours and characteristics of all completed Work.

11.2.4. If after execution of the Contract, the Contractor encounters conditions at the Site than are materially different from those customarily encountered at or near the Premises, any request by the Contractor for additional funds or additional time, shall be governed by provisions of the Contract Documents for Changes in the Work related to unforeseen conditions.

11.2.5. Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications, except as indicated in the provisions

of these General Conditions regarding trenches, trenching, and/or existing utility lines.

11.3. Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for access so that District's representatives may perform their functions.

11.4. Layout and Field Engineering

11.4.1. All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved in writing by District and Architect. Any required Record and/or As-Built Drawings of Site development shall be prepared by the approved civil engineer.

11.4.2. Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. District shall not be liable for any claim for allowances because of Contractor's error or negligence in acquainting itself with the conditions at the Site.

11.4.3. Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

11.5. Utilities for Construction

Utilities necessary to complete the Work and to completely perform all of the Contractors' obligations shall be obtained by the Contractor without adjustment of the Contract Price. The Contractor shall furnish and install necessary or appropriate temporary distributions of utilities, including utilities furnished by the District. Any such temporary distributions shall be removed by the Contractor upon completion of the Work. The costs of all such utility services, including the installation and removal of temporary distributions thereof, shall be borne by the Contractor and included in the Contract Price. Also refer to other utility requirements as indicated in the Specifications.

11.6. Sanitary Facilities

At all times during Work at the Site, the Contractor shall obtain and maintain temporary sanitary facilities in conformity with applicable law, rule or regulation. The Contractor shall maintain temporary sanitary facilities in a neat and clean manner with sufficient toilet room supplies. Personnel engaged in the Work are not permitted to use toilet facilities at the Site. Also refer to other Sanitary facility requirements as indicated in the Specifications.

11.7. Surveys

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

11.8. Regional Notification Center

Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor

unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract time.

11.9. Existing Utility Lines

11.9.1. Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under the Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2. Locations of existing utilities provided by District shall not be considered exact, but approximate within reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care nor costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating, repairing damage not due to the failure of 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 necessarily idle during such work.

11.9.3. No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines, whenever the presence of these utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the Site.

11.9.4. If Contractor, while performing Work, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately, but in no case longer than two (2) Business Days, notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10. Notification

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to the applicable provisions of these General Conditions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11. Hazardous Materials

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, certifications related to hazardous materials in the document entitled Certifications to be Completed by Contractor.

11.12. No Signs

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

12. TRENCHES

12.1. Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds $25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2. Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3. No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

12.4. No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CAL OSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

12.5. Discovery of Hazardous Waste, Unusual Conditions and/or Unforeseen Conditions

12.5.1. Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four (4) feet below the surface, the Contractor shall immediately, but in no case longer than two (2) Business Days, and before the following conditions are disturbed, notify the District, in writing, of any:

12.5.1.1. Material that the Contractor believes may be material that is hazardous waste, as defined in section 25117 of the Health and Safety Code, and requires removal to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

12.5.1.2. Subsurface or latent physical conditions at the Site differing from those indicated.

12.5.1.3. Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

12.5.2. The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, shall issue a Change Order under the procedures described herein.

12.5.3. In the event that a dispute arises between 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, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided by the Contract or by law that pertain to the resolution of disputes and protests, which include the requirement that Contractor complies with the notice and PCO provisions of the Contract Documents. Contractor's failure to submit a proposed change order pursuant to the terms of the Contract Documents shall be deemed a waiver of Contractor's right to an adjustment of the Contract Price of Contract Time.

13. INSURANCE AND BONDS

13.1. Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be in the amounts indicated herein and include the provisions set forth herein.

13.1.1. Commercial General Liability and Automobile Liability Insurance

13.1.1.1. Contractor shall procure and maintain, during the life of the Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from operations under the Contract. This coverage shall be provided in a form at least as broad as the Insurance Services Office (ISO) standard form. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability, and any Auto including owned, non-owned, and hired, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

13.1.1.2. Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed $25,000 unless approved in writing by District.

13.1.2. Umbrella Liability Insurance

13.1.2.1. Contractor shall procure and maintain, during the life of the Contract, an Excess Liability and/or Umbrella Liability Insurance Policy. Any Umbrella Liability Insurance Policy shall protect Contractor, District, State, Construction Manager(s), Program Manager(s), and Architect(s) in the amounts indicated herein, and shall comply with all requirements for Commercial General Liability and Automobile Liability, Employers' Liability Insurance, and Sexual Molestation and Abuse Liability. This coverage shall be provided in a form at least as broad as the Insurance Services Office (ISO) standard form.

13.1.2.2. There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Umbrella Liability Insurance Policy.

13.1.2.3. Whether this Excess Liability and/or Umbrella Liability Insurance Policy is written on a "follow form" or "stand alone" form, the coverages shall equal or greater than the Contractor's Commercial General Liability and Automobile Liability, Employers' Liability Insurance, and Sexual Molestation and Abuse Liability with no exclusions that reduce or eliminate coverage items.

13.1.3. Subcontractor(s): Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Umbrella Liability Insurance with minimum limits equal to at least fifty percent (50%) of the amounts required of the Contractor.

13.1.4. Workers' Compensation and Employers' Liability Insurance

13.1.4.1. In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

13.1.4.2. Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in Work under the Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employees engaged in Work under the Contract, on or at the Site of the Project, are not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5. Sexual Molestation and Abuse Liability Insurance. Contractor shall procure and maintain, during the life of this Contract, sexual molestation and abuse insurance. Contractor shall require its Subcontractor(s), if any, to procure and maintain sexual molestation and abuse insurance for all employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employees engaged in Work under the Contract, on or at the Site of the Project, are not covered under the sexual molestation and abuse insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage to cover any employee(s) not otherwise covered before any of those employee(s) commence work.

13.1.6. Builder's Risk Insurance: Builder's Risk "All Risk" Insurance (NO Earthquake or Flood).

13.1.6.1. Contractor (Builder) shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work included within the Contract Documents.

13.1.6.2. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, water damage, mold, civil authority, theft, sonic disturbance, collapse, wind, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

13.1.6.3. Coverage shall be maintained until final payment has been made as provided under the Contract or until no person or entity other than the District has an insurable interest in the property to be covered, whichever is later. This insurance shall cover as insureds the District, Contractor, all Subcontractors of every tier on the Project, and all vendors and suppliers. Coverage must also be maintained for any materials stored offsite that will be incorporated into the Project.

13.1.6.4. The deductible for this insurance shall be paid by Contractor.

13.1.6.5. Contractor must review the Special Conditions to confirm the scope of this requirement and if the District has modified this provision.

13.1.7. Proof of Carriage of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1. Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under the Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

13.1.7.2. Endorsements, certificates, and insurance policies shall include the following:

13.1.7.2.1. A clause stating:

13.1.7.2.1.1. "This policy shall not be amended, canceled or modified and the coverage amounts shall not be reduced until notice has been mailed to District, Architect, and Construction Manager stating date of amendment, modification, cancellation or reduction. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice."

13.1.7.2.1.2. In lieu of receiving an endorsement with this clause, the District may, at its sole discretion, accept written notification from Contractor and its insurer to the District of any amendments, modifications, cancellations or reduction in coverage, not less than thirty (30) days prior to such coverage changes occur.

13.1.7.2.2. Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

13.1.7.3. All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Program Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.

13.1.7.4. Contractor's and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Program Manager(s), Inspector(s), and/or Architect(s).

13.1.7.5. All endorsements shall waive any right to subrogation against any of the named additional insureds.

13.1.7.6. All policies shall be written on an occurrence form.

13.1.7.7. Unless otherwise stated in the Special Conditions, all of Contractor's insurance shall be placed with insurers **ADMITTED** in California with a current A.M. Best's rating of no less than **A—** or **A:VII.**

13.1.7.8. The insurance requirements set forth herein shall in no way limit the Contractor's liability arising out or relating to the performance of the Work or related activities.

13.1.7.9. Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Agreement.

13.1.8. Insurance Policy Limits

Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

Commercial General Liability	Includes: Bodily Injury, Property Damage, Personal & Advertising Injury, Product Liability and Completed Operations	$2,000,000 each occurrence; $4,000,000 general aggregate
Automobile Liability – Any Auto	Combined Single Limit	$1,000,000 per occurrence
Excess Liability (Umbrella)		$1,000,000 per occurrence; $6,000,000 aggregate
Workers Compensation		Statutory limits pursuant to State law
Employers' Liability		$2,000,000 each incident, each disease; $2,000,000 policy limit
Sexual Abuse / Molestation		$1,000,000 each incident; $2,000,000 policy limit
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Property of Others	Combined Single Limit General Aggregate	Issued for the value and scope of Work stored off-site.

13.2. Contract Security – Bonds

13.2.1. Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

13.2.1.1. Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

13.2.1.2. Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with the Contract.

13.2.2. Cost of bonds shall be included in the Bid and Contract Price.

13.2.3. All bonds related to the Project shall be in the forms set forth in the Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

14. WARRANTY/GUARANTEE/INDEMNITY

14.1. Warranty/Guarantee

14.1.1. Contractor shall obtain and preserve for the benefit of the District, manufacturer's warranties on materials, fixtures, and equipment incorporated into the Work. All manufacturer, material, and fixture warranties shall commence at Project Completion. Contractor shall ensure that all warranties are maintained for the benefit of the District, regardless of the who the manufacturer is, who the installing Subcontractor was, if any, etc. While the District will fully expect the Contractor to manage all warranty

work through all applicable warranty periods, the District must have that same ability if the Contractor fails to perform its warranty obligations as required.

14.1.2. In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work against all defects for a period of **ONE (1)** year after the later of the following dates:

14.1.2.1. The date of completion as defined in Public Contract Code section 7107, subdivision (c),

14.1.2.2. The commissioning date for the Project, if any.

14.1.3. At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from date of Completion as defined above without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within **TEN (10)** days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.4. If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of operations of District, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in the Contract Documents.

14.1.5. The above provisions do not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish to District all appropriate guarantee or warranty certificates as indicated in the Specifications or upon request by District.

14.1.6. Nothing herein shall limit any other rights or remedies available to District.

14.2. Indemnity

14.2.1. To the furthest extent permitted by California law, Contractor shall indemnify, defend with legal counsel reasonably acceptable to the District, keep and hold harmless the District and its consultants, the Architect and its consultants, the Construction Manager and its consultants, separate contractors, and their respective board members, officers, representatives, contractors, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, damages, losses, and expenses, including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, the performance of the Work by Contractor, its Subcontractors, vendors, or suppliers, including, without limitation, any such suit, claim, damage, loss, or expense attributable to, without limitation, bodily injury, sickness, disease, death, alleged patent violation or copyright infringement, or to injury to or destruction of tangible property (including damage to the Work itself) including the loss of use resulting therefrom, except to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or to any extent that would render these provisions void or unenforceable. This agreement and obligation of Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist as to any party or person described herein. This indemnification, defense, and hold harmless obligation includes, without limitation:

14.2.1.1. Any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any stop payment notice actions or liens, including liens by the California Department of Labor Standards Enforcement.

14.2.1.2. Any claim arising (including bid protests) from any errors or mistakes in Contractor's bid documents provided to Subcontractors.

14.2.2. Contractor shall give prompt notice to the District in the event of any injury (including death), loss, or damage included herein. Without limitation of the provisions herein, if Contractor's agreement to indemnify, defend, and hold harmless the Indemnitees as provided herein against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of any of the Indemnitees shall to any extent be or be determined to be void or unenforceable, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein, and in the case of any such suits, claims, damages, losses, or expenses caused in part by the default, negligence, or act or omission of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, and in part by any of the Indemnitees, Contractor shall be and remain fully liable on its agreements and obligations herein to the full extent permitted by law.

14.2.3. In any and all claims against any of the Indemnitees by any employee of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, Contractor's indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

14.2.4. The defense and indemnification obligations hereunder shall survive the Completion of Work, including the warranty/guarantee period, and/or the termination of the Agreement.

15. TIME

15.1. Notice to Proceed

District may issue a Notice to Proceed as indicated in the Instructions to Bidders or will otherwise instruct the Contractor to begin performing the Work of the Project.

15.2. Hours of Work

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies. Contractor and Subcontractors shall continuously furnish sufficient forces to ensure the performance of the Work in accordance with the Construction Schedule. In no event will the District be responsible for the costs of Work performed outside of regular working hours, including, without limitation, overtime or weekend Work, unless expressly agreed to by the District in writing and approved in a Change Order.

15.3. Progress and Completion

15.3.1. Time of the Essence

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

15.3.2. No Commencement Without Insurance

15.3.2.1. Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District's claim for damages.

15.4. Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

15.5. Expeditious Completion

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

16. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1. Contractor's Notice of Delay

16.1.1. In addition to the requirements indicated in this subsection, Contractor shall submit any request for an adjustment of the Contract Price or the Contract Time through the Change Order provisions in these General Conditions.

16.1.2. Contractor shall, within **FIVE (5)** calendar days of any delay impacting the critical path in completing the Work, notify District in writing of the causes of the delay including documentation and facts explaining the delay.

16.1.3. Any request by Contractor for an adjustment of the Contract Price or the Contract Time for a delay shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work.

16.1.4. Any claim for delay must include the following information as support, without limitation:

16.1.4.1. Duration. The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform the activities within the stated duration.

16.1.4.2. Schedule Analysis. A detailed schedule analysis articulating the cause of any delay and explaining the delay's impact to critical path and each activity of the Project. This analysis may be in the form of a time impact analysis. The time impact analysis shall provide all documentation and justification necessary to substantiate the requested extension. All supporting documentation shall be based on the then current Monthly Progress Schedule.

16.1.4.3. **Logical Ties / Fragnets.** Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. (A portion of any delay of seven (7) days or more must be provided.) Include a "fragnet" analysis for the portion of the schedule and the activities the Contractor contends are impacted by the delay.

16.1.4.4. **Updated Construction Schedule.** A recovery or updated Construction Schedule must be submitted.

16.1.5. District shall review the facts and extent of any noticed delay and may grant Contract Time extension(s) of time for completing Work when, in the District's judgment, the findings of fact justify an extension.

16.1.6. Extension(s) of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected.

16.1.7. An extension of time may only be granted if Contractor has timely submitted the updated Construction Schedule as required herein.

16.1.8. Following submission of a notice of delay, the District may determine whether the delay is to be considered:

16.1.8.1. Excusable and Compensable, Excusable and Non-Compensable, or Unexcused;

16.1.8.2. How long the delay continues; and

16.1.8.3. To what extent the prosecution and Completion of the Work might be delayed thereby.

16.1.9. Contractor's failure to request adjustment(s) of the Contract Time in strict conformity with applicable provisions of the Contract Documents shall be deemed Contractor's waiver of its right to assert a claim for a delay.

16.1.10. Limitations Upon Adjustment of Contract Time on Account of Delays. Any adjustment of the Contract Time on account of an Excusable Delay or a Compensable Delay shall be limited as set forth herein. No adjustment of the Contract Time shall be made on account of any Excusable Delays or Compensable Delays unless those delay(s) actually and directly impact Work or Work activities on the critical path of the then current and updated approved Construction Schedule as of the date on which a delay first occurs. The District shall not be deemed in breach of, or otherwise in default of any obligation hereunder, if the District shall deny a request by the Contractor for an adjustment of the Contract Time for any delay that does not actually and directly impact Work on the then current and updated approved Construction Schedule. In submitting a request for an adjustment of Contract Time, and as a condition precedent to the District's review of that request, Contractor shall insert into the then current and updated approved Construction Schedule a "fragnet" analysis representing the event that Contractor claims to result in delay to the critical path as depicted in the updated approved Construction Schedule. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay that ends last. If an Unexcused Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, which the Excusable Delay or the Compensable Delay exceeds the period of time of the Unexcused Delay.

16.2. **Excusable and Compensable Delay(s)**

16.2.1. Contractor is **not** entitled to additional compensation for any delay, even a delay caused by

Adverse Weather or an Excusable Delay, unless **all** of the following conditions are met ("**Excusable and Compensable Delay**"):

16.2.1.1. The District is responsible for the delay;

16.2.1.2. The delay is unreasonable under the circumstances involved and impacts the critical path of the Work and extends the most current Contract Completion date;

16.2.1.3. The delay was not within the contemplation of District and Contractor;

16.2.1.4. Contractor complies with the Change Order procedures, and if necessary, the Claims procedures of the Contract Documents;

16.2.1.5. The delay could not have been avoided or mitigated by the Contractor's care, prudence, foresight, and diligence;

16.2.1.6. The delay extends the most current Contract Completion date; and

16.2.1.7. The delay is not concurrent with a Contractor-caused delay or other type of Excusable Delay.

16.2.2. In accordance with California Public Contract Code section 7102, if the Contractor's progress is delayed by the events described in the preceding subsection, Contractor shall not be precluded from the recovery of damages directly and proximately resulting therefrom. In that event, Contractor's damages, if any, shall be limited to direct, actual and unavoidable additional costs of labor, materials or construction equipment directly resulting from that delay, and shall exclude special, indirect or consequential damages. In no event shall Contractor seek costs or damages for delays, interruptions, hindrances or disruptions to the Work for on-Site or off-Site costs or damages based upon formulas, e.g. Eichleay or other formula. Except as expressly provided for herein, Contractor shall not have any other claim, demand or right to adjustment of the Contract Price arising out of delay, interruption, hindrance or disruption to the progress of the Work. Adjustments to the Contract Price and the Contract Time, if any, on account of Changes to the Work or Suspension of the Work shall be governed by the applicable provisions of the Contract Documents, including without limitation, the "Changes in the Work" section and the percentages in the "Format for Proposed Change" section of these General Conditions.

16.3. Excusable and Non-Compensable Delay(s)

16.3.1. An "Excusable Delay" shall mean an interruption of the Work beyond the reasonable control of the Contractor and that:

16.3.1.1. Could have not been avoided by the Contractor exercising care, prudence, foresight, and diligence, and

16.3.1.2. Actually extended the most current Project Completion date.

16.3.2. The Contractor may be entitled to an extension of the Project Completion date if there is an Excusable Delay, but the Contractor shall not be entitled to additional compensation for an Excusable Delay.

16.3.3. Force Majeure.

16.3.3.1. Excusable Delays are limited to interruptions that satisfy the above requirements and that are acts of God; acts of a public enemy; fires; floods; windstorms; tornadoes; earthquakes; wars; riots; insurrections; epidemics; pandemics; quarantine

restrictions; strikes; lockouts; fuel shortages; freight embargoes; and Adverse Weather that satisfies the requirements herein ("**Force Majeure Events**").

16.3.3.2. If an Infectious Disease impacts the progress of the Work and Contractor demonstrates that the event satisfies the conditions of the Contract Documents for an adjustment to the Contract Time, it will be considered a Force Majeure Event.

16.3.3.3. In addition to any other requirement of the Contract Documents, Contractor shall not be entitled to any adjustment to the Contract Time unless Contractor submits a PCO and the District has issued a Change Order pursuant to the "Changes in the Work" provisions herein. If the Parties cannot in good faith and reasonably agree to an increase in the Contract Time, the Parties agree that dispute will be resolved pursuant to the Claims Resolution Process herein.

16.3.4. Contractor is aware that governmental agencies and utilities, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Contractor is not entitled to make a claim for damages or delays or an Excusable Delay arising from the review of Contractor's drawings or other approvals from the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies.

16.3.5. Neither the financial resources of the Contractor or any person or entity directly or indirectly engaged by the Contractor in performance of any portion of the Work shall be deemed conditions beyond the control of the Contractor. If an event of Excusable Delay occurs, the Contract Time shall be subject to adjustment hereunder only if the Contractor establishes: (i) full compliance with all applicable provisions of the Contract Documents relative to the method, manner and time for Contractor's notice and request for adjustment of the Contract Time; (ii) that the event(s) forming the basis for Contractor's request to adjust the Contract Time are outside the reasonable control and without any fault or neglect of the Contractor or any person or entity directly or indirectly engaged by Contractor in performance of any portion of the Work; and (iii) that the event(s) forming the basis for Contractor's request to adjust the Contract Time directly and adversely impacted the critical path of the Work as indicated in the approved Construction Schedule or the most recent updated approved Construction Schedule relative to the date(s) of the claimed event(s) of Excusable Delay.

16.3.6. <u>Computation of Time / Adverse Weather</u>

16.3.6.1. The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor within five (5) calendar days of the Adverse Weather event, and only if **<u>all</u>** of the following conditions are met – thereby making the resulting delay an Excusable Delay.

16.3.6.1.1. The weather conditions constitute Adverse Weather, as defined herein and further specified in the Special Conditions;

16.3.6.1.2. Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

16.3.6.1.3. The Contractor's crew is dismissed as a result of the Adverse Weather; and

16.3.6.1.4. The number of days of delay exceed those indicated in the Special Conditions.

16.3.6.2. A day-for-day extension will only be allowed for those days in excess of those indicated in the Special Conditions and only if the tasks of Work on the day affected by the Adverse Weather were tasks required to be performed on that day to maintain the critical path of the Construction Schedule.

16.3.6.3. The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule, and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

16.3.6.4. The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

16.4. Unexcused Delay(s) – Liquidated Damages

16.4.1. Unexcused delays refer to any delay to the progress of the Work caused by events or factors other than those specifically identified in the "Excusable and Compensable Delay(s)" or the "Excusable and Non-Compensable Delay(s)" sections above ("**Unexcused Delays**"). Neither the Contract Price nor the Contract Time shall be adjusted on account of Unexcused Delays.

16.4.2. Contractor and District hereby agree that the exact amount of damages for failure to complete the Work within the time specified is extremely difficult or impossible to determine. If the Work is not completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall forfeit and pay to District as fixed and liquidated damages, and not as a penalty, the amount set forth in the Agreement for each calendar day of delay in Completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

16.4.3. Contractor shall not forfeit or pay liquidated damages for an Excusable Delay or an Excusable and Compensable Delay.

17. CHANGES IN THE WORK

17.1. No Changes Without Authorization

17.1.1. There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order, a written Unilateral Change Order, or a written Force Account Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work, any changes to the Contract Time, or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by an executed Change Order, a written Unilateral Change Order, or a written Force Account Directive.

17.1.2. Verbal Order of Change in the Work. Any verbal order, direction, instruction, interpretation, or determination from the District, the Project Inspector or the Architect which in the opinion of the Contractor causes any change to the scope of the Work, or otherwise requires an adjustment to the Contract Price or the Contract Time, shall be treated as a Change only if the Contractor gives the Architect written notice within three (3) Business Days of the order, directions, instructions, interpretation or determination and prior to acting in accordance therewith. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to address the order, direction, instruction, interpretation or determination giving rise to Contractor's notice. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice within three (3) Business Days of any verbal order, direction, instruction, interpretation or determination shall be deemed Contractor's waiver of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of that verbal order, direction,

instruction, interpretation or determination. The written notice shall state the date, circumstances, extent of adjustment to the Contract Price or the Contract Time, if any, requested, and the source of the verbal order, directions, instructions, interpretation or determination that the Contractor regards as a Change. Unless the Contractor acts in strict accordance with this procedure, any verbal order, direction, instruction, interpretation or determination shall not be treated as a Change and the Contractor hereby waives any claim for any adjustment to the Contract Price or the Contract Time on account thereof.

17.1.3. The Surety, in executing and providing the Performance Bond and the Payment Bond, shall be deemed to have expressly agreed to any change to the Contract and to any extension of time made by reason thereof.

17.1.4. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in the Change Order, Unilateral Change Order, or Force Account Directive. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

17.1.5. Contractor shall perform immediately all work that has been authorized by a fully executed Change Order, Unilateral Change Order, or Force Account Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work and Contractor's failure or refusal to so proceed with that Work may be deemed to be Contractor's default of a material obligation of the Contractor under the Contract Documents.

17.1.6. Should any Change Order result in an increase in the Contract Price, the cost of that Change Order shall be agreed to, in writing, in advance by Contractor and District and be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District, Unilateral Change Order, or Force Account Directive, Contractor waives any claim of additional compensation or time for that additional work.

17.1.7. Contractor understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

17.1.8. In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent all threatened loss or injury. Any compensation or time claimed by Contractor on account of emergency work shall be determined as indicated herein as a PCO.

17.2. Architect Authority

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Unilateral Change Order, or by Architect's response(s) to RFI(s).

17.3. Change Orders

17.3.1. A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's governing board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

17.3.1.1. A description of a change in the Work;

17.3.1.2. The amount of the adjustment in the Contract Price, if any; and

17.3.1.3. The extent of the adjustment in the Contract Time, if any.

17.3.2. If a Change Order is required to be approved by DSA, the District may call it a Construction Change Document.

17.3.3. If the District approves a Change, the District or the Architect shall provide a written Change Order to the Contractor describing the Change and setting forth the adjustment to the Contract Time and the Contract Price, if any, on account of that Change. All Change Orders shall be full payment and final settlement of all rights for direct, indirect and consequential costs, including without limitation, costs of delays or impacts related to, or arising out of, items covered and affected by the Change Order, as well as any adjustments to the Contract Time. Any demand or request for an adjustment to the Contract Time or the Contract Price relating to any Change incorporated into a Change Order not presented by the Contractor for inclusion in the Change Order shall be deemed waived. The Contractor shall execute the Change Order prepared pursuant to the foregoing. After the Change Order has been prepared and forwarded to the Contractor for execution, the Contractor shall not modify or amend the form or content of such Change Order, or any portion thereof.

17.4. Unilateral Change Orders

17.4.1. A Unilateral Change Order is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District, directing a change in the Work. The District may as provided by law, by Unilateral Change Order and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. Any dispute as to the sum of the Unilateral Change Order or timing of payment shall be resolved pursuant to the Payment provisions and the Claims provisions herein. **A Unilateral Change Order is NOT a Construction Change Document (which is defined above as a Change Order that DSA must approve)**.

17.4.2. The District may issue a Unilateral Change Order in the absence of agreement on the terms of a Change Order.

17.5. Force Account Directives

17.5.1. When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

17.5.2. District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by District.

17.5.3. All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

17.5.4. Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overheard and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive.

17.5.5. Contractor shall notify District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless

specifically authorized in writing by the District. Contractor will not be compensated for force account work in the event that Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6. Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report on a form supplied by the District no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to Contractor for its records. District will not sign, nor will Contractor receive compensation for work District cannot verify. Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7. In the event Contractor and District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6. Price Request

17.6.1. Definition of Price Request. A Price Request ("PR") is a written request prepared by the Architect or the District, requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2. Scope of Price Request. A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.6.3. Contractor shall not consider Price Requests to be instructions either to stop work in progress or to execute the proposed change.

17.6.4. Within the time specified in Price Request after receipt of Price Request, Contractor shall submit a quotation estimating cost adjustments to the Contract Price and the Contract Time necessary to execute the change, with the following documentation and information:

17.6.4.1. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

17.6.4.2. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

17.6.4.3. Include costs of labor and supervision directly attributable to the change.

17.6.4.4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

17.7. Proposed Change Order

17.7.1. Proposed Change Order. The Contractor may issue a Proposed Change Order ("PCO"), only as a

written request prepared by it to the District and the Architect, requesting that the District issue a Change Order based upon a proposed change to the Work.

17.7.2. Changes in Contract Price. A PCO shall include breakdowns pursuant to the provisions herein to validate any change in Contract Price and include all reasonable documentation as required herein.

17.7.3. Changes in Time. A PCO shall also include any changes in time required to complete the Project. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationships. Use available total float before requesting an extension of the Contract Time. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. If Contractor fails to request a time extension in a PCO, then the Contractor is thereafter precluded from requesting time and/or claiming a delay. If the Contractor is requesting additional time and believes that time is both Excusable and Compensable, then the Contractor must provide detailed documentation that supports its position and that addresses all the components of the "Excusable and Compensable Delay(s)" section above.

17.7.4. Unknown and/or Unforeseen Conditions. If Contractor submits a PCO requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.7.5. Time to Submit PCO. Contractor shall submit its PCO within five (5) days of the date Contractor discovers, or reasonably should discover, the circumstances giving rise to the proposed change order, unless additional time to submit a proposed change order is granted in writing by the District. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to the address the basis for the PCI. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice (with Supporting Documentation to permit the District's review and evaluation) within this time frame shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of the circumstances giving rise to the PCO.

17.7.6. COVID-19 and other Infectious Disease(s).

17.7.6.1. Contractor agrees that its bid, the Contract Price and the Contract Time are based on the Contractor's full compliance with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with Infectious Disease(s) (as defined herein) including COVID-19, and/or any similar virus or derivative strain at the time of Contract award. Therefore, any cost or delay associated with Infectious Disease(s), or any derivative or similar strain thereof, or any federal, state, or local order relating thereto, shall not be considered compensable unless:

17.7.6.1.1. It occurred after the date of the award of the Contract to Contractor;

17.7.6.1.2. It materially increases the Contract Price or the Contract Time; and

17.7.6.1.3. Contractor notifies the District within 10 days of notice of any a new derivative, strain, or new public health order(s), including the anticipated increase to the Contract Price or Contract Time due to the new derivative, strain, or new public health order(s), and

Contractor substantiates those costs with detailed supporting documentation as required for a PCO.

17.7.6.2. If, during the construction of the Project, the applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with Infectious Disease(s), and/or any similar virus or derivative strain, are changed or rescinded (e.g., by the reduction of potential exposure or risk due to vaccinations), the Parties agree to reduce the Contract Price and the Contract Time due to the removal of the required efforts. If the Parties cannot mutually agree on the appropriate reduction, the District may issue a Unilateral Change Order for an amount of time and money it determines to be both reasonable and appropriate. The Parties agree that any dispute related to this provision will be resolved pursuant to the Claims Resolution Process herein.

17.8. Format for Proposed Change Order

17.8.1. The following "Format For Proposed Change For Subcontractor Performed Work" and "Format For Proposed Change For Contractor Performed Work" shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO's) to communicate proposed additions and deductions to the Contract, supported by attached documentation.

FORMAT FOR PROPOSED CHANGE FOR <u>SUBCONTRACTOR</u> PERFORMED WORK

	<u>SUBCONTRACTOR PERFORMED WORK</u>	**<u>ADD</u>**	**<u>DEDUCT</u>**
(A)	**<u>Labor Charge</u>** 1. **Hours.** Attach total itemized hours, by each Subcontractor at each tier. 2. **Rate.** This shall be no more than the Straight-Time Total Hourly Rate as determined by the Department of Industrial Relations ("DIR") for the applicable labor category.		
(B)	**<u>Labor Burden & Worker's Compensation Charge</u>** 1. This shall be no more than **<u>twenty percent (20%)</u>** of **item (A)**, the Labor Charge. 2. This shall be the total cumulative charge permitted for all Subcontractors or all labor performed by the Subcontractor or Subcontractor's Subcontractor(s) (i.e., all "lower-tier" Subcontractor(s)).		
(C)	**<u>Subtotal (A+B)</u>**		
(D)	**<u>Material Charge</u>** Attach itemized quantity and unit cost plus sales tax and invoice(s) from vendor(s).		
(E)	**<u>Equipment Charge</u>** Attach invoice(s) from supplier(s).		
(F)	**<u>Subtotal (C+D+E)</u>**		
(G)	**<u>Subcontractor's Overhead and Profit Charge</u>** 1. This shall be no more than **<u>eight percent (8%)</u>** of **item (F)**. 2. This shall be the total cumulative mark-up permitted for the Subcontractor and Subcontractor's Subcontractor(s) (i.e., all "lower-tier" Subcontractor(s)).		
(H)	**<u>Subtotal (F+G)</u>**		
(I)	**<u>Contractor's Overhead, Profit, Bond and Insurance</u>** 1. This shall be no more than **<u>six percent (6%)</u>** of **Item (F)**. 2. This shall be the total mark-up permitted for Contractor.		
(J)	**<u>TOTAL (H+I)</u>**		
(K)	**<u>Time</u>**	**_____ Days**	

FORMAT FOR PROPOSED CHANGE FOR <u>CONTRACTOR</u> PERFORMED WORK

	<u>CONTRACTOR PERFORMED WORK</u>	**<u>ADD</u>**	**<u>DEDUCT</u>**
(A)	**<u>Labor Charge</u>** 1. **Hours.** Attach total itemized hours. 2. **Rate.** This shall be no more than the Straight-Time Total Hourly Rate as determined by the Department of Industrial Relations ("DIR") for the applicable labor category.		
(B)	**<u>Labor Burden & Worker's Compensation Charge</u>** 1. This shall be no more than **<u>twenty percent (20%)</u>** of **item (A)**, the Labor Charge. 2. This shall be the total cumulative charge permitted for all labor performed by Contractor.		
(C)	**<u>Subtotal (A+B)</u>**		
(D)	**<u>Material Charge</u>** Attach itemized quantity and unit cost plus sales tax and invoice(s) from vendor(s).		
(E)	**<u>Equipment Charge</u>** Attach invoice(s) from supplier(s).		
(F)	**<u>Subtotal (C+D+E)</u>**		
(G)	**<u>Contractor's Overhead, Profit, Bond and Insurance</u>** 1. This shall be no more than **<u>six percent (6%)</u>** of **Item (F)**. 2. This shall be the total mark-up permitted for Contractor.		
(H)	**<u>TOTAL (F+G)</u>**		
(I)	**<u>Time</u>**	**_____ Days**	

17.8.2. All Proposed Change Order requests by Contractor for a change shall include a complete itemized breakdown with the following detail:

17.8.2.1. Labor. Labor breakdown by trade classification, wage rates, and estimated hours. Labor costs shall only include fringe benefits indicated by governing trade organizations. Wages shall not exceed current prevailing wages in the locality for performance of the changes.

17.8.2.1.1. The Contractor's or Subcontractors' labor burden and Workers' Compensation premium shall only be charged as indicated herein. In no event shall Contractor include any other charges than as indicated herein without the prior written approval of the District.

17.8.2.2. Material. Material quantities, and types of products, and transportation costs, if applicable.

17.8.2.3. Equipment. Equipment breakdown by make, type, size, rental rates (if not owned), equipment hours and transportation costs, if applicable.

17.8.2.3.1. The equipment costs shall not exceed one hundred percent (100%) of the Association of Equipment Distributors (AED) rental rates and delay factors or Caltrans rates and delay factors, whichever is less. Hourly, daily, weekly, or monthly rates shall be used, whichever is lower. Hourly rates including operator shall not be used.

17.8.2.3.2. The time to be paid for equipment shall be the actual time that the equipment is in (1) productive operation on the Work or (2) idled because of the event or circumstance giving rise to the Proposed Change Order.

17.8.2.3.2.1. To calculate the costs of idle equipment, the Contractor must use the applicable idle equipment rate. For example, and clarification purposes only, if the rate for "X" piece of equipment is $100 and the applicable delay factor is .20 for that piece of equipment, then the hourly rate for idle equipment shall be $20 ($100 x .20), which shall be applied against the number of hours idle. In no event shall Contractor charge an amount greater than 50% of the applicable equipment rate for idle equipment.

17.8.2.3.2.2. In computing the hourly rental of equipment, any time less than thirty (30) minutes shall be considered one-half (1/2) hour.

17.8.2.3.2.3. No payment will be made for time while equipment is inoperative due to breakdown, or for non-workdays.

17.8.2.3.2.4. The rental time shall not include the time required to move the equipment to and from the project site. No mobilization or demobilization will be allowed for equipment already on site. If equipment is not moved by its own power, then loading and transportation costs will be paid in lieu of rental time thereof. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the Project Site in any other way than upon the work directly related to the event or circumstance giving rise to the Proposed Change Order.

17.8.2.3.3. Individual pieces of equipment having a replacement value of one thousand dollars ($1,000) or less shall be considered to be small tools or small equipment, and no payment will be made since the costs of these tools and equipment is included as part of the markup for overhead and profit defined herein.

17.8.2.3.4. Payment to the Contractor for the use of equipment as set forth above shall constitute full compensation to the Contractor for the cost of fuel, power, oil, lubricants,

supplies, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators), and any and all costs to the Contractor incidental to the use of the equipment.

17.8.2.3.5. Should Contractor, or any of its owners, officers, directors or agents, hold any ownership interest in any company, organization, association or corporation from whom rental equipment is secured. Contractor shall immediately notify District of such and the price set for any such rental shall be agreed upon in advance by the Contractor and the District.

17.8.2.4. Overhead, Profit, Bond and Insurance Costs. Markup for overhead and profit, which shall be used to compensate Contractor for all costs for all administration, general conditions, and supervision, including, without limitation:

17.8.2.4.1. All home office overhead, field office overhead, field office personnel including, but not limited to, principals, project managers, superintendents, supervisory foremen, estimators, project engineers, detailers, draftsmen, schedulers, consultants, watchmen, payroll clerks, administrative assistants, labor compliance costs and secretaries.

17.8.2.4.2. All field and field office expenses including, but not limited to, field trailers, parking, storage sheds, office equipment and supplies, telephone service and long distance telephone calls, computers, fax machines, temporary utilities, sanitary facilities and services, janitorial services, small tools and equipment with a cost under $1000 each, portable scaffolding, blocking, shores, appliances, job vehicles, security and fencing, conformance to regulatory requirements including compliance to safety regulations, safety programs and meetings, cartage, warranties, As-Built Drawings, as well as any related maintenance costs.

17.8.2.4.3. Administrative functions such as, but not limited to, reviewing, coordinating, distributing, processing, posting, recording, estimating, negotiating, expediting, engineering, drawing, detailing, revising shop drawings, carting, cleaning, protecting the work, and other incidental Work related to the change.

17.8.2.4.4. All other costs and taxes required to be paid, but not included under direct costs as defined above including, without limitation, payroll taxes, social security, etc.

17.8.2.4.5. All costs for Contractor's bonds and insurance.

17.8.2.4.6. Taxes: Federal excise tax shall not be included. District will issue an exemption on request.

17.8.2.5. Contract Time. Justification for any adjustment in Contract Time including a schedule analysis identifying critical schedule activities delayed by the request. Contract Time shall be extended or reduced by Change Orders, Unilateral Change Orders, or Force Account Directives for a period of time commensurate with the time reasonably necessary to perform a Change. This time must be requested in writing by the Contractor with the Price Request, PCO, or expressly in writing as part of its documentation for Unilateral Change Orders, or Force Account Directives. The Contractor shall justify any Contract Time extension by submittal of a schedule analysis as required in this Changes section of these General Conditions accurately portraying the impact of the change on the critical path of the Construction Schedule. Changes performed within available float shall not justify an extension to the Contract Time. The District shall make the final determination of the amount of Contract Time to allocate to any Change.

17.8.2.6. Supporting Documentation. Contractor shall include with each PCO, along with the itemized breakdown as required herein, reasonable documentation substantiating the

requested change in the Contract Price and Contract Time. If the District deems Contractor's supporting documentation incomplete or inadequate to substantiate the requested change to the Contract Price and Contract Time, the District may request that Contractor supplement the PCO with additional, reasonable supporting documentation.

17.9. Change Order Certification

17.9.1. All Change Orders and PCOs shall include the following certification by the Contractor. The Parties acknowledged that if a Change Order is approved that does not include this language, that Change Order shall be deemed to include this certification language:

> ***The Contractor approves the foregoing as to the changes, if any, and the price specified for each item and the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete all additional work specified for the consideration stated herein. Submission of sums that have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District. It is expressly understood that the value of the extra Work or changes includes all of the Contractor's costs, expenses, field overhead, home office overhead, profit, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs, expenses, damages, or time extensions not included are deemed waived.***

17.10. Determination of Change Order Cost

17.10.1. The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

17.10.1.1. District acceptance of a PCO;

17.10.1.2. By agreement between District and Contractor.

17.10.1.3. By unit prices or alternates contained in Contractor's original bid. If the Bid for the Work included proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add any such Alternate Bid Item(s) if the that item did not form a basis for award of the Contract or delete any such Alternate Bid Item(s) if that item formed a basis for award of the Contract. If the District elects to add or delete an Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for that Alternate Bid Item(s) shall be as set forth in the Contractor's Bid, at the District's discretion. If any Alternate Bid Item is added or deleted from the Work pursuant to the foregoing, the Contract Time shall be adjusted by the number of days allocated for the added or deleted Alternate Bid Item in the Contract Documents; if days are not allocated for any Alternate Bid Item added or deleted pursuant to the foregoing, the Contract Time shall be equitably adjusted.

17.10.1.4. By the District, based upon actual and necessary costs incurred by the Contractor as determined by the District on the basis of the Contractor's records. Promptly upon determining the extent of adjustment to the Contract Price, the District shall notify the Contractor in writing of the same; the Contractor shall be deemed to have accepted the District's determination of the amount of adjustment to the Contract Price on account of a Change to the

Work unless Contractor shall notify the District, in writing, not more than fifteen (15) days from the date of the District's written notice, of any objection to the District's determination. Failure of the Contractor to timely notify the District of Contractor's objections to the District's determination of the extent of adjustment to the Contract Price shall be deemed Contractor's acceptance of the District's determination and a waiver of any right or basis of the Contractor to thereafter protest or otherwise object to the District's determination. Notwithstanding any objection of the Contractor to the District's determination of the extent of any adjustment to the Contract Price pursuant to this provision, Contractor shall diligently proceed to perform and complete any such Change.

17.11. Deductive Change Orders

If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total overhead and profit to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) overhead and profit to be deducted with the amount of its deducted work, for a total minimum of ten percent (10%) total overhead and profit to be deducted. Any deviation from this provision shall not be allowed.

17.12. Discounts, Rebates and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor’s cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

17.13. Accounting Records

With respect to portions of the Work performed by Change Orders, Unilateral Change Orders, or Force Account Directives, Contractor shall keep and maintain cost-accounting records satisfactory to the District, which shall be available to the District on the same terms as any other books and records Contractor is required to maintain pursuant to the Contract Documents.

17.14. Notice Required

If Contractor is seeking an adjustment in the Contract Price, or any extension in the Contract Time for Completion, it shall notify District pursuant to the provisions of the Contract Documents. No adjustment in the Contract Price or Contract Time shall be considered unless made in accordance with the Contract Documents. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such contract adjustment shall only be authorized by a Change Order.

17.15. Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders, Unilateral Change Orders, or Force Account Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

17.16. Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

17.17. Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

18. REQUEST FOR INFORMATION

18.1. Any Request for Information ("RFI") shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. Contractor shall make suggestions and interpretations of the issue raised by each RFI. An RFI cannot modify the Contract Price, Contract Time, or the Contract Documents.

18.2. Contractor shall be liable to the District for all costs incurred by the District associated with the processing, reviewing, evaluating and responding to any RFI, including without limitation, fees of the Architect and any other design consultant to the Architect or the District, that District reasonably determines:

18.2.1. Does not reflect adequate or competent supervision or coordination by the Contractor or any Subcontractor; or

18.2.2. Does not reflect the Contractor's adequate or competent knowledge of the requirements of the Work or the Contract; or

18.2.3. Requests an interpretation or decision of a matter where the information sought is equally available to the Contractor; or

18.2.4. Is not justified for any other reason.

18.3. Prior to submitting the RFI, Contractor shall diligently review the Contract Documents for information responsive to the RFI, including information incorporated by reference. Contractor should not issue an RFI regarding information contained in or inferable from the Contract Documents, including information incorporated by reference. An RFI is invalid if the RFI response is contained in or inferable from the Contract Documents.

18.4. Contractor shall be responsible for preparing and submitting each RFI so as to not cause delay to the progress of the Work nor to cause any impact to the Contractor's labor productivity. An RFI may be considered untimely if not submitted within **Forty Eight (48) hours** of receipt from a Contractor's subcontractor. Untimely submission of any RFI will preclude Contractor from asserting any claims for delay or for labor impact against the District.

18.5. If the Contractor fails to timely notify the Architect in writing of any Conditions encountered and the Contractor proceeds to perform any portion of the Work containing or affected by such Conditions the Contractor shall bear all costs associated with or required to correct, remove, or otherwise remedy any portion of the Work affected thereby without adjustment of the Contract Time or the Contract Price. In requesting information of the District to address and resolve any conditions, the Contractor shall act with promptness in submitting any written request so as to allow the District a reasonable period of time to review, evaluate and respond to any request, taking into account the then current status of the progress and completion of the Work and the actual or potential impact of any conditions upon the completion of the Work within the Contract Time. The Contract Time shall not be subject to adjustment in the event that the Contractor shall fail to timely request information from the District.

19. PAYMENTS

19.1. Contract Price

19.1.1. The Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work pursuant to the Contract Documents. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board (SAB), payment may be subject to that approval being received, funding by the SAB, and funds being released by the Office of Public School Construction (OPSC).

19.2. Applications for Progress Payments

19.2.1. Procedure for Applications for Progress Payments

19.2.1.1. Application for Progress Payment

19.2.1.1.1. Not before the fifth (5^{th}) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the Architect an itemized Application for Payment for Work completed in accordance with the Schedule of Values. The Application for Payment shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1. The amount paid to the date of the Application for Payment to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

19.2.1.1.1.2. The amount being requested by the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

19.2.1.1.1.3. The balance that will be due to each of the entities after payment is made;

19.2.1.1.1.4. A certification that the As-Built Drawings and annotated Specifications are current;

19.2.1.1.1.5. An Itemized breakdown of Work performed;

19.2.1.1.1.6. An updated and acceptable construction schedule in conformance with the provisions herein;

19.2.1.1.1.7. The additions to and subtractions from the Contract Price and Contract Time;

19.2.1.1.1.8. A total of the retention held;

19.2.1.1.1.9. The material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

19.2.1.1.1.10. The percentage of completion of the Contractor's Work by line item;

19.2.1.1.1.11. The Schedule of Values updated from the preceding Application for Payment;

19.2.1.1.1.12. A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from each subcontractor of any tier and supplier to be paid from the current progress payment;

19.2.1.1.1.13. A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from each subcontractor of any tier and supplier that was paid from the previous progress payment; and

19.2.1.1.1.14. A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application. The Contractor further warrants that all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed.

19.2.1.1.1.15. If requested by the District, a third party, or as required by the California Department of Industrial Relations, all requested or required certified payroll record ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment.

19.2.1.1.2. Except as expressly provided for herein, no payments shall be made by the District on account of any item of the Work, including without limitation, materials or equipment that, at the time of the Contractor's submittal of an Application for Progress Payment, has/have not been incorporated into and made a part of the Work.

19.2.1.1.3. Contractor shall be subject to the False Claims Act set forth under Government Code section 12650 et seq., for information provided with any Application for Progress Payment.

19.2.2. Prerequisites for Progress Payments

19.2.2.1. First Payment Request: The following items, if applicable, must be completed before District will accept and/or process Contractor's first payment request:

19.2.2.1.1. Installation of the Project sign;

19.2.2.1.2. Installation of field office;

19.2.2.1.3. Installation of temporary facilities and fencing;

19.2.2.1.4. Schedule of Values;

19.2.2.1.5. Contractor's Construction Schedule;

19.2.2.1.6. Schedule of unit prices, if applicable;

19.2.2.1.7. Submittal Schedule;

19.2.2.1.8. Receipt by Architect of all submittals due as of the date of the payment application;

19.2.2.1.9. Copies of necessary permits;

19.2.2.1.10. Copies of authorizations and licenses from governing authorities;

19.2.2.1.11. Initial progress report;

19.2.2.1.12. Surveyor qualifications;

19.2.2.1.13. Written acceptance of District's survey of rough grading, if applicable;

19.2.2.1.14. List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;

19.2.2.1.15. All bonds and insurance endorsements; and

19.2.2.1.16. Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

19.2.2.2. Second Payment Request: District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.

19.2.2.3. No Waiver of Criteria: Any payment made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. The approval of any Application for Progress Payment or the disbursement of any Progress Payment to the Contractor shall not be deemed nor constitute acceptance of defective Work or Work not in conformity with the Contract Documents. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a material breach of the Contract by Contractor and may subject Contractor to termination.

19.3. Progress Payments

19.3.1. District's Approval of Application for Payment

19.3.1.1. Upon receipt of an Application for Payment, District shall act in accordance with the following:

19.3.1.1.1. Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

19.3.1.1.2. Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without being subject to any applicable statute regarding prompt payment or interest accrual, shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3. An approved Application for Payment shall be considered payable if funds are available for payment after the deduction of amounts allowed by law and/or pursuant to the section herein entitled "Decisions to Withhold Payment,"

19.3.1.2. The District's review of the Contractor's Application for Payment will be based

on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

19.3.1.2.1. Observation of the Work for general conformance with the Contract Documents,

19.3.1.2.2. Results of subsequent tests and inspections,

19.3.1.2.3. Minor deviations from the Contract Documents correctable prior to Completion, and

19.3.1.2.4. Specific qualifications expressed by the Architect.

19.3.1.3. District's approval of each Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid Application for Payment.

19.3.2. Payments to Contractor

19.3.2.1. Within thirty (30) days after District's receipt of each undisputed and properly submitted Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in Contractor's estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

19.3.2.2. District shall withhold five percent (5%) retention from all Progress Payments.

19.3.2.3. District may withhold ten percent (10%) retention from all Progress Payments pursuant to Public Contract Code section 7201, if the Project is determined to be "substantially complex."

19.3.2.4. The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

19.3.2.5. In accordance with Public Contract Code §20104.50, in the event that the District shall fail to make any Progress Payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Progress Payment, the District shall pay the Contractor interest on the undisputed amount of such Application for Progress Payment equal to the legal rate of interest set forth in California Code of Civil Procedure §685.010(a).

19.3.3. No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

19.3.4. Warranty of Title

19.3.4.1. If a lien or a claim based on a stop notice or stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or a claim based on a stop notice or stop payment notice to be released or discharged immediately therefrom.

19.3.4.2. If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop notice or stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefore, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor pursuant to the Contract.

19.4. Decisions to Withhold Payment

19.4.1. Reasons to Withhold Payment

District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required herein cannot be made. District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to:

19.4.1.1. Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor;

19.4.1.2. Stop notices, stop payment notices or other liens served upon the District as a result of the Contract;

19.4.1.3. Liquidated damages assessed against the Contractor;

19.4.1.4. The cost to complete the Work if there exists reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the Completion Date;

19.4.1.5. Damage to the District or other contractor(s);

19.4.1.6. Unsatisfactory performance of the Work by Contractor;

19.4.1.7. Failure to store and properly secure materials;

19.4.1.8. Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports;

19.4.1.9. Failure of the Contractor to maintain As-Built Drawings;

19.4.1.10. Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment;

19.4.1.11. Unauthorized deviations from the Contract Documents;

19.4.1.12. Failure of the Contractor to perform the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates;

19.4.1.13. If requested by the District, or the failure to provide to the DIR, certified payroll records acceptable to the District and the DIR for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment;

19.4.1.14. Failure to properly pay prevailing wages as defined in Labor Code sections 1720 et seq. and/or failure to comply with any other Labor Code requirements;

19.4.1.15. Failure to properly maintain or clean up the Site;

19.4.1.16. Failure to timely indemnify, defend or hold harmless the District;

19.4.1.17. Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits;

19.4.1.18. Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents;

19.4.1.19. Failure to pay any royalty, license or similar fees;

19.4.1.20. Failure of the Contractor to submit on a timely basis all Closeout Documentation in a manner and form that is proper, sufficient, and reasonably acceptable to the District, and to not cause a delay in the Completion or approval of the Project; or

19.4.1.21. Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines imposed therefore against Contractor or District.

19.4.1.22. Payment is delayed due to an audit inquiry by the State, the County Office of Education, the County, or any entity with jurisdiction related to the Project.

19.4.1.23. Contractor is otherwise in breach, default or in substantial violation of any provision of the Contract;

19.4.2. Reallocation of Withheld Amounts

19.4.2.1. District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made pursuant to the Contract and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

19.4.2.2. If Contractor defaults or neglects to perform the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after **FORTY-EIGHT (48)** hours written notice to the Contractor and, without prejudice to any other remedy, make good such deficiencies. District shall adjust the total Contract Price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work that is damaged, defective, or not done in accordance with Contract provisions, an

equitable reduction in the Contract Price (of at least one hundred twenty-five percent (125%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3. Payment After Cure

When Contractor cures the grounds for declining approval, payment shall be made for amounts so withheld. No interest shall be paid on any retention or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

19.5. Subcontractor Payments

19.5.1. Payments to Subcontractors. No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to its Sub-subcontractors in a similar manner.

19.5.2. No Obligation of District for Subcontractor Payment. District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

19.5.3. Joint Checks. District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, any obligation from the District to such Subcontractor, or rights in such Subcontractor against the District.

20. COMPLETION OF THE WORK

20.1. Completion

20.1.1. The Project may only be accepted by action of the governing board of the District.

20.1.2. District shall accept the Project and may have a Notice of Completion recorded when Project Completion has been achieved in accordance with the Contract Documents and to the satisfaction of District. For purposes of the payment of Retention, Completion is defined in Public Contract Code section 7107. For purposes of the timely filing of Stop Payment Notices, Completion is defined in California Civil Code section 9200, et seq.

20.1.3. There is no "*substantial completion*" for this Project. Even so, the District, at its sole option, may accept the Project and record a Notice of Completion when Project Completion has been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within thirty-five (35) days after the date of the District's acceptance of the Project, District shall withhold from the final payment one hundred fifty percent (150%) of an estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

20.1.4. At the end of the thirty-five (35) day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

20.2. Closeout Procedures

20.2.1. Punch List

Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

20.2.2. Closeout Requirements

20.2.2.1. Utility Connections

Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

20.2.2.2. As-Built Drawings

20.2.2.2.1. In addition to its requirement to provide monthly As-Built Drawings to the District, the Contractor shall provide a final set of As-Built Drawings, sometimes referred to as "Record Drawings," showing all of the Work as actually constructed upon Completion of the Project as indicated in the Specifications.

20.2.2.2.2. Contractor is liable and responsible for any and all inaccuracies in the As-Built Drawings, even if inaccuracies become evident at a future date.

20.2.2.2.3. Upon Completion of the Work and as a condition precedent to approval of final payment, Contractor shall obtain the Inspector's approval of the final set of As-Built Drawings.

20.2.2.3. Operations & Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.4. Closeout Documentation: Contractor shall provide all Closeout Documentation, which shall include the following, without limitation:

20.2.2.4.1. A full set of final As-Built Drawings, as further defined herein.

20.2.2.4.2. All Operations & Maintenance Manuals and information, as further defined herein.

20.2.2.4.3. All Warranties, as further defined herein.

20.2.2.4.4. Verified report(s) for all scope(s) of work (DSA 6-C, Rev 03/22/13, or more recent revision if available).

20.3. Final Inspection

20.3.1. Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of Contractor's superintendent and project manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract

Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2. Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3. Final Inspection Requirements

20.3.3.1. Before calling for final inspection, Contractor shall determine that the following have been performed:

20.3.3.1.1. The Work has been completed.

20.3.3.1.2. All life safety items are completed and in working order.

20.3.3.1.3. Mechanical and electrical Work are complete and tested, fixtures are in place, connected, and ready for tryout.

20.3.3.1.4. Electrical circuits scheduled in panels and disconnect switches labeled.

20.3.3.1.5. Painting and special finishes complete.

20.3.3.1.6. Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

20.3.3.1.7. Tops and bottoms of doors sealed.

20.3.3.1.8. Floors waxed and polished as specified.

20.3.3.1.9. Broken glass replaced and glass cleaned.

20.3.3.1.10. Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

20.3.3.1.11. Work cleaned, free of stains, scratches, and other foreign matter, of damaged and broken material replaced.

20.3.3.1.12. Finished and decorative work shall have marks, dirt, and superfluous labels removed.

20.3.3.1.13. Final cleanup, as provided herein.

20.4. Costs of Multiple Inspections

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

20.5. Partial Occupancy or Use Prior to Completion

20.5.1. District's Rights to Occupancy. The District may occupy or use any completed or partially completed portion of the Work at any stage. Neither the District's Final Acceptance, the making of Final

Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. The District and the Contractor shall agree in writing to the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents. Any dispute as to responsibilities shall be resolved pursuant to the Claims provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

20.5.2. Inspection Prior to Occupancy or Use. Immediately prior to partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

20.5.3. No Waiver. Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or acceptance of the Work not complying with the requirements of the Contract Documents.

21. FINAL PAYMENT AND RETENTION

21.1. Final Payment

21.1.1. Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment or similar document indicating Architect's agreement that the Project has reached Completion. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work has not reached Completion to the satisfaction of the District.

21.1.2. Upon acceptance of the Work of the Contractor as having reached Completion to the satisfaction of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District may record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay all the amount(s) due to its Subcontractors.

21.2. Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1. A full and final waiver or release of all stop notices and stop payment notices in connection with the Work shall be submitted by Contractor, including a release of stop notice or stop payment notice in recordable form, together with (to the extent permitted by law) a copy of the full and final release of all stop notice or stop payment notice rights.

21.2.2. A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136 from each subcontractor of any tier and supplier to be paid from the current progress payment.

21.2.3. A duly completed and executed unconditional waiver and release upon final payment compliant with Civil Code section 8138 from each subcontractor of any tier and supplier that was paid from the previous progress payment.

21.2.4. Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and

ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

21.2.5. Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

21.2.6. Contractor must have completed all requirements set forth under "Closeout Procedures," including, without limitation, submission of an approved set of complete As-Built Drawings.

21.2.7. Architect shall have issued its written approval that final payment can be made.

21.2.8. Contractor shall have delivered to the District all manuals and materials required by the Contract Documents.

21.2.9. Contractor shall have completed final clean up as provided herein.

21.3. Retention

21.3.1. The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

21.3.1.1. After approval of the District by the Architect's Certificate of Payment;

21.3.1.2. After the satisfaction of the conditions set forth herein;

21.3.1.3. Within sixty (60) days after Completion;

21.3.1.4. No earlier than thirty-five (35) days of the recording of the Notice of Completion by District, if a Notice of Completion is recorded by the District.

21.4. Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

21.5. Claims Asserted After Final Payment

Any lien, stop payment notice or other claim filed or asserted after the Contractor's acceptance of the Final Payment by any Subcontractor, of any tier, laborer, Material Supplier or others in connection with or for Work performed under the Contract Documents shall be the sole and exclusive responsibility of the Contractor pursuant to the indemnification obligations of the Contract Documents. In the event any lien, stop payment notice or other claim of any Subcontractor, Laborer, Material Supplier or others performing Work under the Contract Documents remain unsatisfied after Final Payment is made, Contractor shall refund to District all monies that the District may pay or be compelled to pay in discharging any lien, stop payment notice or other claim, including, without limitation all costs and reasonable attorneys' fees incurred by District in connection therewith.

22. UNCOVERING WORK, CORRECTION OF WORK AND RIGHT TO TAKEOVER WORK

22.1. Uncovering of Work

If a portion of the Work is covered without Project Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be replaced at the Contractor's expense without change in the Contract Price or Contract Time.

22.2. Rejection of Work

Prior to the District's Acceptance of the Work, any Work or materials or equipment forming a part of the Work or incorporated into the Work that is defective or not in conformity with the Contract Documents may be rejected by the District, the Architect or the Project Inspector and the Contractor shall correct all rejected Work without any adjustment to the Contract Price or the Contract Time, even if the Work, materials or equipment have been previously inspected by the Architect or the Project Inspector or even if they failed to observe the defective or non-conforming Work, materials or equipment.

22.3. Nonconforming Work

22.3.1. Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

22.3.2. If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

22.4. Correction of Work

22.4.1. Correction of Rejected Work. Pursuant to the notice provisions herein, the Contractor shall promptly correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

22.4.2. One-Year Warranty Corrections. If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

22.5. District's Right to Takeover Work

22.5.1. If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

22.5.2. If it is found at any time, before or after Completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

22.5.2.1. That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

22.5.2.2. That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

22.5.2.3. That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Unilateral Change Order, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

22.5.3. Acceptance of Defective or Non-Conforming Work. The District may, in its sole and exclusive discretion, elect to accept Work that is defective or that is not in accordance with the requirements of the Contract Documents, instead of requiring its removal and correction, in which case the Contract Price shall be reduced as appropriate and equitable.

23. TERMINATION AND SUSPENSION

23.1. District's Right to Terminate Contractor for Cause

23.1.1. Grounds for Termination. The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon the following:

23.1.1.1. Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

23.1.1.2. Contractor fails to complete said Work within the time specified or any extension thereof, or

23.1.1.3. Contractor persistently fails or refused to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

23.1.1.4. Contractor files a petition for relief as a debtor, or a petition is filed against the Contractor without its consent, and the petition not dismissed within sixty (60) days; or

23.1.1.5. Contractor makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency; or

23.1.1.6. Contractor persistently or repeatedly refuses fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

23.1.1.7. Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

23.1.1.8. Contractor persistently disregards laws, or ordinances, or instructions of District; or

23.1.1.9. Contractor fails to supply labor, including that of Subcontractors, that can work in harmony with all other elements of labor employed or to be employed on the Work; or

23.1.1.10. Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract.

23.1.2. Notification of Termination

23.1.2.1. Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

23.1.2.2. Upon termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to takeover and perform this Contract only if Surety:

23.1.2.2.1. Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to takeover and perform this Contract; and

23.1.2.2.2. Commences performance of the Contract within seven (7) days from date of serving of its notice to District.

23.1.2.3. If Surety fails to notify District or begin performance as indicated herein, District may takeover the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in the Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

23.1.2.4. **Conversion to Termination for Convenience.** In the event the Contract is terminated under this "District's Right to Terminate Contractor for Cause" section and it is finally determined by an arbitrator, court, jury or other tribunal having jurisdiction, for any reason, that the Contractor was not in default under the provisions hereof or that the District's exercise of its rights under this section was defective, deficient, ineffective, invalid or improper for any reason, the termination shall be deemed a termination for convenience of the District under the "Termination of Contractor for Convenience" section herein and thereupon, the rights and obligations of the District and the Contractor shall be determined in accordance with the "Termination of Contractor for Convenience" section herein.

23.1.3. Effect of Termination

23.1.3.1. Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. Contractor and its Surety shall be liable upon the performance bond for all damages caused the District by reason of the Contractor's failure to complete the Contract.

23.1.3.2. In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

23.1.3.3. In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

23.1.3.4. If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

23.1.3.5. **Assignment and Assumption of Subcontracts**. District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of it Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

23.1.3.6. The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

23.2. **Emergency Termination of Public Contracts Act of 1949**

23.2.1. The Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

23.2.1.1. Section 4410 of the Government Code states:

> In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

23.2.1.2. Section 4411 of the Government Code states:

> Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall

pay to the other or any other person, under the facts and circumstances in the case.

23.2.2. Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted Schedule of Values, that price shall control. District, in its sole discretion, may adopt the Contract Price as the reasonable value of the Work performed or any portion thereof.

23.3. Termination of Contractor for Convenience

23.3.1. District in its sole discretion may terminate the Contract upon three (3) days written notice to the Contractor. Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause. In case of a termination for convenience, Contractor shall have no claims against the District except:

23.3.1.1. The actual cost for labor, materials, and services performed that is unpaid and can be documented through timesheets, invoices, receipts, or otherwise, and

23.3.1.2. Five percent (5%) of the total cost of work performed as of the date of termination, or five percent (5%) of the value of the Work yet to be performed, whichever is less. This five percent (5%) amount shall be full compensation for all Contractor's and its Subcontractor(s)' mobilization and/or demobilization costs and any anticipated loss profits resulting from termination of the Contractor for convenience.

23.4. Suspension of Work

23.4.1. District may, without cause, order Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as District may determine. When the District resumes the Project, the Parties will attempt to negotiate an adjustment in the Contract Price for increases or decreases in the cost of performance of the Project caused by suspense, delay or interruption. If the Parties cannot agree on an adjusted Contract Price, the District may terminate the Contract as permitted herein.

23.4.2. In the event the District shall order suspension of the Work, an adjustment shall be made to the Contract Price for increases in the direct cost of performance of the Work of the Contract Documents, actually caused by suspension, delay or interruption ordered by the District; provided however that no adjustment of the Contract Price shall be made to the extent: (i) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible under the Contract Documents; or (ii) that an equitable adjustment is made or denied under another provision of the Contract Documents. The foregoing notwithstanding, any adjustment of the Contract Price shall not include any adjustment to increase the Contractor's overhead, general administrative costs or profit, all of which will remain as reflected in the Schedule of Values submitted by the Contractor pursuant to the Contract Documents. In the event of the District's suspension of the Work, the Contract Time shall be equitably adjusted.

23.5. Scope Reduction

In cases of suspension, partial or complete termination, or at the discretion of the District, the District reserves the right to unilaterally approve a deductive Change Order to reduce scope of work or perform work with other forces or its own forces.

24. CLAIMS RESOLUTION

24.1. Exclusive Remedy.

24.1.1. Compliance with the claim resolution process and timelines described in this Claims Resolution section as well as the notice provisions of the Contract are express conditions precedent to Contractor's right to commence litigation or arbitration, file a claim under the California Government Code, or commence any other legal action related to the Project ("Claims Resolution Process").

24.1.2. Contractor acknowledges that its failure, for any reason, to provide written notice and all required supporting documentation to permit the District's review and evaluation within the time frame required by this Claims Resolution Process, shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert, request, or demand any entitlement to an adjustment of the Contract Time or the contract Price on account of any instruction, request, drawings, specifications, action, condition, omission, default or other situation.

24.1.3. To the extent any provision(s) of this Claims Resolution Process conflict with or otherwise impair the timeframes and procedures of Public Contract Code section 9204, the provisions of Section 9204 shall control. If provisions of this Claims Resolution Process are supplementary and/or in addition to the requirements of Section 9204, but do not conflict with or otherwise impair the timeframes and procedures of Section 9204, the provisions of this Claims Resolution Process and the Contract shall control.

24.2. Performance during Claim Resolution Process.

The Contractor shall diligently proceed with Work on the Project at the same time that Claims are addressed under the Claims Resolution Process. It is the intent of District to resolve Claims with the Contractor as close to the events giving rise to the Claims as possible, and to avoid stale or late Claims and the late documenting of Claims. Contractor's failure to diligently proceed in accordance with the District's instructions or the Contract terms will be considered a material breach of the Contract and a waiver of Contractor's rights under this Contract.

24.3. Waiver.

If Contractor fails to timely submit any written notices required under the terms of the Contract or in this Claims Resolution section, Contractor waives and releases its rights regarding further review of its Claim, unless Contractor and District mutually agree in writing to other time limits.

24.4. Intention.

The Claims Resolution Process required herein is intended to provide a concise mechanism for resolving Claims as they arise during the Project, while requiring accurate documentation related to contested issues as to those Claims that are not contemporaneously resolved.

24.5. Other Provisions.

If portions of the Contract, other than this Claims Resolution Process, establish a specific process regarding a specific subject, then that process shall govern and control the resolutions of any disagreements thereunder. Otherwise, the provisions in this Claims Resolution Process shall control the resolution of all Claims.

24.6. Claim Presentation

24.6.1. Claim: A claim is a written demand by Contractor (or by Contractor on behalf of a Subcontractor) that the Contractor must submit by **registered mail or certified mail return receipt requested** for:

24.6.1.1. An extension to the Contract Time, including relief from damages or penalties assessed by the District for delay;

24.6.1.2. Payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment that is not otherwise expressly provided for in the Contract Documents or the Contractor is not otherwise entitled; or

24.6.1.3. Payment that is disputed by the District.

("**Claim**")

24.6.2. A PCO may be a Claim, but the Parties agree that a PCO shall only be a Claim if:

24.6.2.1. The District states in writing that it disagrees with the terms of a PCO and directs the Contractor to utilize the Claim Resolution Process, or

24.6.2.2. The District rejects in whole or in part a PCO and the Contractor states in writing that it is utilizing the Claim Resolution Process for the portion of the PCO that the District rejected.

24.6.3. <u>Subcontractor Claims.</u>

24.6.3.1. Public Contract Code section 9204(d)(5) states that the Contractor may present to the District a Claim on behalf of a Subcontractor or lower tier Subcontractor. A Subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier Subcontractor, that the Contractor present a claim for Work which was performed by the Subcontractor or by a lower tier Subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim. Within 45 days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the claim to the District and, if the Contractor did not present the Claim, provide the Subcontractor with a statement of the reasons for not having done so.

24.6.3.2. Contractor is responsible for providing this Claims Resolution Process to its Subcontractors and for ensuring that all Subcontractors or others who may assert Claims by and through Subcontractors and/or the Contractor are informed of this Claims Resolution Process. No Claim submitted by any party that fails to follow the provisions of this Claims Resolution Process will be considered. Contractor shall indemnify, keep and hold harmless the District and its consultants, against all suits, claims, damages, losses, and expenses, including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, the failure to provide this Claims Resolution Process to its Subcontractors or others who may assert Claims by and through Subcontractors and/or the Contractor.

24.6.4. Contractor Must Timely Identify, Present and Document Any Claim

24.6.4.1. Every Claim shall be stated with specificity in writing and signed by Contractor under penalty of perjury and presented to the District within ten (10) calendar days from the date Contractor discovers or reasonably should discover, that an act, error or omission of District, its agents or employees, or action, condition or other situation has occurred that may entitle Contractor to make a Claim. This shall include the Contractor's actual or constructive knowledge of any instruction, request, drawings, specifications, action, condition, omission, default or other situation for which the contractor believes there should an adjustment of the Contract Price or Contract Time. Contractor shall provide this writing even if Contractor has not yet been damaged, delayed, or incurred extra cost when Contractor discovers, or reasonably should

discover, the act, error, omission, action, condition or situation giving rise to the incidents giving rise to the Claim. The writing shall:

24.6.4.1.1. Identify all of the issues, events, conditions, circumstances and/or causes giving rise to the Claim;

24.6.4.1.2. Identify all pertinent dates and/or durations and all actual and/or anticipated effects on the Contract Price, milestones and/or Contract Time adjustments; and

24.6.4.1.3. Identify in detail line-item costs if the Claim seeks money.

24.6.4.1.4. If the Claim involves extra work, a detailed cost breakdown of the amounts the Contractor is seeking, including actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that those costs have actually been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must 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 request of District, extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged extra work on a daily basis).

24.6.4.1.5. If the Claim involves an error or omission in the Contract Documents:

24.6.4.1.5.1. An affirmative representation under penalty of perjury by Contractor and any affected Subcontractors and suppliers that the error or omission was not discovered prior to submitting a proposal for the Work, and

24.6.4.1.5.2. A detailed statement demonstrating that the error or omission reasonably should not have been discovered, by Contractor, its Subcontractors and suppliers, prior to submitting a proposal for the Work.

24.6.4.1.6. If the Claim involves a request for additional compensation for escalation of materials costs, then this provision exclusively governs those request(s) by Contractor and the following are **all** conditions precedent to Contractor's submission of a Change Order Request or Claim for additional compensation for escalation of materials costs.

24.6.4.1.6.1. Contractor shall not be entitled to submit a request for compensation for escalation of materials unless the actual increase in the cost of the materials in question exceeds ten percent (10%) of the **total** material costs on the Project at the time of bid.

24.6.4.1.6.2. The cost escalation is the result of unusual and unforeseeable market conditions not reasonably foreseeable at the time of award of the Contract and was not an escalated cost resulting from any action or inaction of the Contractor.

24.6.4.1.6.3. Contractor timely ordered and/or purchased the materials at issue, based on (1) Contractor's constructive knowledge of the supply chain for required materials and (2) Contractor's request to utilize the provisions in the Contract Documents related to the District's payment for materials and equipment purchased and stored on Site or offsite.

24.6.4.1.6.4. Contractor's material costs were reasonable at the time of Contractor's bid for the Project.

24.6.4.1.6.5. Contractor demonstrates an actual increase in the cost of materials in its Contract Price at the time of award of the Contract and/or as reflected in Contractor's escrowed bid documents compared to Contractor's actual material payment cost paid either at time of purchase or delivery, whichever is earlier.

24.6.4.1.6.6. An actual year-to-date price increase has occurred and can be substantiated by the E.N.R. 20-City Average Material Cost Index for the material at issue that demonstrates the claim for an increase in price of the material at the time of delivery of the higher priced material to the Project.

24.6.4.2. The writing shall be accompanied by all documents substantiating Contractor's position regarding the Claim.

24.6.4.3. A Claim that asserts an effect on any schedule milestones and/or Contract Time shall include all pertinent scheduling data demonstrating the impact(s) on the critical path(s), milestone(s) and/or Contract Time.

24.6.4.4. Contractor agrees that it shall not base its damages, its calculations or its Claim on a "total cost" approach, a "modified total cost" approach or a "jury verdict method" approach.

24.6.5. Certification. Each copy of the Claim Documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of the Contract Documents. This certification shall be under penalty of perjury and must include the following language immediately above or before the Contractor's signature: "***I declare under penalty of perjury under the laws of the State of California that the information provided and statements made in this Claim are true and correct, substantiated and of merit***." The Contractor acknowledges that this requirement is not a mere formality but is intended to ensure that the Contractor only submits Claims that it believes are true and correct, substantiated and have merit. Should Contractor fail to submit the foregoing written statement signed under penalty of perjury, Contractor waives and releases its Claim, including all rights and remedies in connection therewith. This certification must include a certification of any portion of the Claim from Subcontractor(s) or others who are asserting Claims by and through Subcontractors and/or the Contractor

24.6.6. District's Written Statement/Decision on Claim. The District shall issue a written statement/decision regarding the Claim to the Contractor within forty-five (45) days of receipt of the written Claim from the Contractor, or three (3) days after the District's first regular governing board meeting after that 45-day period if the District's governing board does not meet within that first 45-day period. If the District fails to timely provide a written statement/decision regarding the Claim, the Claim shall be deemed rejected in its entirety.

24.6.7. Contractor Must Demand an Informal Meet and Confer Conference if Contractor Pursues Any Claim

24.6.7.1. FAILURE OF A CONTRACTOR TO TIMELY DEMAND A MEET AND CONFER CONFERENCE IS A WAIVER OF ITS RIGHT TO PURSUE ALL OR A PORTION OF ITS CLAIM.

24.6.7.2. Where There Is No Agreement: If there is no agreement between Contractor and the District on a Claim, then within ten (10) calendar days of the date of the District's written statement/decision in response to a Claim or PCO, if Contractor pursues that Claim, then Contractor must demand, by **registered mail or certified mail return receipt requested,** a meet and confer conference with District staff. A meet and confer conference with District staff shall be a condition precedent to Contractor seeking any further relief, including a mediation as indicated below.

24.6.7.3. Where There Is Partial Agreement: If Contractor and the District partially agree on a Claim but do not reach complete agreement, then the Parties shall complete a Change Order, if applicable, for the issues and/or amounts agreed to. For those issues not agreed to, if Contractor pursues those issues from that Claim, then Contractor must demand, by **registered mail or certified mail return receipt requested,** a meet and confer conference with District staff regarding those issues. A meet and confer conference with District staff shall be a condition precedent to Contractor seeking any further relief, including a mediation as indicated below, in connection with the District's rejection.

24.6.7.4. Meet and Confer Conference. District and Contractor shall schedule the meet and confer conference as soon as reasonably possible after Contractor's written demand for a meet and confer conference, but in no case later than thirty (30) days after Contractor's demand.

24.6.7.5. District's Written Decision. Within ten (10) **business** days of the meet and confer conference, the District shall issue a written decision. If the District fails to timely provide a written statement/decision after the meet and confer conference, all Claim issues that were part of the meet and confer conference shall be deemed rejected in their entirety.

24.6.7.5.1. If the District's decision completely resolves the Claim, then the Parties shall complete a Change Order, if applicable, for the issues and/or amounts agreed to.

24.6.7.5.2. If the District rejects the Contractor's Claim in whole or in part or does not issue a timely written response, then the parties shall mediate the remaining issues of the Claim.

24.6.7.5.3. Contractor's costs incurred in seeking relief for Claims are not recoverable from District.

24.6.8. Mediation.

24.6.8.1. At the District's sole discretion, this mediation may be a multiple-party mediation with the Architect, the Construction Manager, the Inspector, and/or other District consultants.

24.6.8.2. The District and Contractor shall mutually agree to a mediator within ten (10) **business** days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

24.6.9. Contractor's Obligation to File a Government Code Claim. Nothing in this Contract, including this Claims Resolution Process, waives, modifies or tolls the Contractor's obligation to present a timely claim under Government Code section 910, et seq. Therefore, in addition to complying with this Claims Resolution Process, the Contractor is required to present claims to the District pursuant to Government Code section 910, et seq. If after the requirements of this Claims Resolution Process are satisfied, and all or a portion of the Claim remains unresolved, and if the Government Code claim is rejected by the District, the Contractor may proceed under the post-mediation provisions of this Claims Resolution Process.

24.6.10. Post Mediation Provisions

24.6.10.1. Claims of $375,000 or Less: The provisions of Public Contract Code § 20104.4 shall apply. Pursuant to Public Contract Code § 20104.4(a), within sixty (60) days, but no earlier

than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. Pursuant to Public Contract Code § 9204(d)(2)(D), a mediation conducted pursuant to this Claims Resolution Process shall excuse the obligation under Public Contract Code § 20104.4(a) to mediate after litigation has been commenced unless otherwise agreed to by the parties in writing.

24.6.10.2. Litigation of Claims in Excess of $375,000. If, after a mediation as indicated above, the Parties have not resolved the Claim, either Party may commence an action in a court of competent jurisdiction to contest that decision within ninety (90) days following the conclusion of that mediation or one (1) year following the accrual of the cause of action, whichever is later. By mutual agreement, the Parties can agree to instead resolve the Claim through arbitration.

24.6.11. The District shall be entitled to remedy any false claims, as defined in California Government Code section 12650 *et seq*., made to the District by the Contractor or any Subcontractor under the standards set forth in Government Code section 12650 *et seq*. Any Contractor or Subcontractor who submits a false claim shall be liable to the District for three times the amount of damages that the District sustains because of the false claim. A Contractor or Subcontractor who submits a false claim shall also be liable to the District for (a) the costs, including attorney fees, of a civil action brought to recover any of those penalties or damages, and (b) a civil penalty of up to $11,000 for each false claim. In addition, Contractor may be subject to criminal prosecution under California Penal Code §72 and/or civil liability under False Claims Act. If so, the District may be entitled to recover its costs incurred to investigate any False Claim, including but not limited to attorneys' fees and expert fees incurred in connection with that investigation.

24.7. Documentation of Resolution.

If a Claim is resolved, the District shall determine if that resolution shall be documented in an Agreement and Release of Any and All Claims form or other document, as appropriate.

24.8. Claim Resolution Process – Non-Applicability.

The procedures and provisions in this Claims Resolution section shall **not** apply to:

24.8.1. District's determination of what Work is or will be constructed, or whether the Work complies with the Contract Documents for purposes of accepting the Work;

24.8.2. District's rights and obligations as a public entity, such as, but without limitation, the revocation of prequalified or qualified status, barring a contractor from District contracts, the imposition of penalties or forfeitures prescribed by statute or regulation; provided, however, that penalties imposed against a public entity by statutes such as Public Contract Code section 7107, shall be subject to the mandatory dispute resolution provisions of this Claims Resolution section and the Contract;

24.8.3. Personal injury, wrongful death or property damage claims;

24.8.4. Latent defect or breach of warranty or guarantee to repair;

24.8.5. Stop notices or stop payment notices; or

24.8.6. Any other District rights as set forth herein.

24.9. The District's failure to respond to a Claim from the Contractor within the time periods described herein or to otherwise meet the time requirements of Public Contract Code section 9204 shall

automatically result in the Claim being deemed rejected in its entirety, with no admission by the District as to the merits of the Claim.

24.10. If District fails to timely issue payment for any Claim or portion of a Claim as required pursuant to these Claim Resolution Procedures, the Contractor is permitted to assess interest indicated in Public Contract Code section 9204. Notwithstanding this provision, and in accordance with Public Contract Code section 7107, the District is entitled to withhold up to 150% of disputed amounts and the District shall not be liable for payment of interest on such disputed amounts pending final adjudication of such disputes.

25. LABOR, WAGE & HOUR, APPRENTICE AND RELATED PROVISIONS

25.1. Contractor & Subcontractor Registration

25.1.1. Contractor shall comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner of California and complying with any applicable enforcement by the Department of Industrial Relations. Labor Code section 1771.1(a) states the following:

> "A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded."

25.1.2. Contractor acknowledges that, for purposes of Labor Code section 1725.5, all or some of the Work is a public work to which Labor Code section 1771 applies. Contractor shall comply with Labor Code section 1725.5, including without limitation the registration requirements. Additionally, all Contractor's Subcontractors shall comply with Labor Code section 1725.5 to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of the Contract. Contractor represents that all of its Subcontractors are registered pursuant to Labor Code section 1725.5.

25.1.3. The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor shall post job site notices, as prescribed by regulation. Contractor shall comply with all requirements of Labor Code section 1771.4, except the requirements that are exempted by the Labor Commissioner for the Project.

25.2. Wage Rates, Travel and Subsistence

25.2.1. Pursuant to the provisions of article 2 (commencing at section 1770), chapter 1, part 7, division 2, of the Labor Code of California, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request and are available to any interested party on request or at **www.dir.ca.gov/oprl/statistics_and_databases.html**.. Contractor shall obtain and post a copy of these wage rates at the job site.

25.2.2. Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified rate of per diem wages, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively

bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

25.2.3. Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project not less than the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations ("DIR") ("Director"), regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

25.2.4. If during the period this bid is required to remain open, the Director determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Invitation to Bid or the Contract subsequently awarded.

25.2.5. Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount, (currently not to exceed two hundred dollars ($200) for each calendar day, or portion thereof), for each worker paid less than the prevailing rates, as determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it.

25.2.5.1. The amount of the penalty shall not be less than forty dollars ($40) for each calendar day, or portion thereof, unless the failure of Contractor was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of Contractor.

25.2.5.2. The amount of the penalty shall not be less than eighty dollars ($80) for each calendar day or portion thereof, if Contractor has been assessed penalties within the previous three (3) years for failing to meet Contractor's prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

25.2.5.3. The amount of the penalty may not be less than one hundred twenty dollars ($120) for each calendar day, or portion thereof, if the Labor Commissioner determines the Contractor willfully violated Labor Code section 1775.

25.2.5.4. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate, shall be paid to each worker by Contractor.

25.2.6. Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

25.2.7. Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by section 3093, and similar purposes.

25.2.8. Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

25.3. Hours of Work

25.3.1. As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal days work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

25.3.2. Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

25.3.3. Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty five dollars ($25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

25.3.4. Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

25.4. <u>Payroll Records</u>

25.4.1. Contractor and all Subcontractors must comply with the compliance monitoring provisions of Labor Code section 1771.4, including furnishing its certified payroll records ("CPR(s)") to the Labor Commissioner of California and complying with any applicable enforcement by DIR. Labor Code section 1771.4 requires Contractor and Subcontractors to provide electronic copies of CPRs to the Labor Commissioner of California at least once every thirty (30) days, and within thirty (30) days of Project Completion. The failure to timely provide the CPRs could result in penalties as determined by Labor Code section 1771.4, applicable laws, and regulations

25.4.2. If requested by the District, Contractor shall provide to the District and shall cause each Subcontractor performing any portion of the Work to provide the District and an accurate CPR(s), 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 the Contractor and/or each Subcontractor in connection with the Work.

25.4.3. In addition to any other requirements pursuant to Labor Code sections 1770, et seq., the CPRs enumerated hereunder shall be certified and shall be provided to the District on a weekly basis. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District shall not make any payment to Contractor until:

25.4.3.1. Contractor and/or its Subcontractor(s) provide CPRs acceptable to the District, and

25.4.3.2. The District is given sufficient time to review and/or audit the CPRs to determine their acceptability. Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the District in a timely manner will directly delay the District's review and/or audit of the CPRs

and Contractor's payment.

25.4.4. All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

25.4.4.1. A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or the employee's authorized representative on request.

25.4.4.2. CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the Department of Industrial Relations.

25.4.4.3. CPRs 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 District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records reimburse the costs of preparation by 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 Contractor.

25.4.5. The form of certification for the CPRs shall be as follows:

I, _____ (Name-Print), the undersigned, am the _____ _____ (Position in business) with the authority to act for and on behalf of _____ _____ (Name of business and/or Contractor), certify under penalty of perjury that the records or copies thereof submitted and consisting of _____ (Description, number of pages) are the originals or true, full, and correct copies of the originals which depict the payroll record(s) of actual disbursements by way of cash, check, or whatever form to the individual or individual named, and (b) we have complied with the requirements of sections 1771, 1811, and 1815 of the Labor Code for any work performed by our employees on the Project.

Date: _____ Signature: _____
(Section 16401 of Title 8 of the California Code of Regulations)

25.4.6. Each Contractor shall file a certified copy of the CPRs with the entity that requested the records within ten (10) days after receipt of a written request.

25.4.7. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or 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 Contractor awarded Contract or performing Contract shall not be marked or obliterated.

25.4.8. Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) Business Days, provide a notice of change of location and address.

25.4.9. In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit one hundred dollars ($100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of Division of Apprenticeship Standards or Division of Labor Standards Enforcement, these penalties shall be withheld

from progress payments then due.

25.4.10. It shall be the responsibility of Contractor to ensure compliance with the provisions of Labor Code section 1776.

25.5. Apprentices

25.5.1. Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

25.5.2. Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

25.5.3. Every apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which the apprentice is employed, and shall be employed only at the work of the craft or trade to which the apprentice is registered.

25.5.4. Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which the apprentice is training.

25.5.5. Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

25.5.6. Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

25.5.7. If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

25.5.7.1. Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

25.5.7.2. Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

25.5.8. Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

25.5.9. Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California 94102.

25.5.10. Contractor shall ensure compliance with all certification requirements for all workers on the Project including, without limitation, the requirements for electrician certification in Labor Code sections 108, et seq.

25.6. Non-Discrimination

25.6.1. Contractor herein agrees not to discriminate in its recruiting, hiring, promotion, demotion, or termination practices on the basis of race, religious creed, national origin, ancestry, sex, age, or physical handicap in the performance of this Contract and to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246, and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

25.6.2. Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

25.7. Labor First Aid

Contractor shall maintain emergency first aid treatment for Contractor's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) the California Occupational Safety and Health Act of 1973, and all related regulations, including without limitation section 330 et seq. of Title 8 of the California Code of Regulations.

26. MISCELLANEOUS

26.1. Assignment of Antitrust Actions

26.1.1. Section 7103.5(b) of the Public Contract Code states:

> In entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, 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 (commending with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

26.1.2. Section 4552 of the Government Code states:

> 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 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder 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.

26.1.3. Section 4553 of the Government Code states:

> If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the

public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

26.1.4. Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

26.1.5. Under this Article, "public purchasing body" is District and "bidder" is Contractor.

26.2. Excise Taxes

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

26.3. Taxes

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 of the Revenue and Taxation Code; Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

26.4. Shipments

All shipments must be F.O.B. destination to Site or sites, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

26.5. Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project which it is part, or for any other reason, Contactor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

DOCUMENT 00 71 00

SPECIAL CONDITIONS

1. **Project Description**

The information provided here is a summary only. All bidders must thoroughly review the Plans and Specifications and the other Contract Documents for a full understanding of the scope of the Work of the Project.

a. **Scope**.

Furnishing all labor, materials, and equipment, and services as may be needed to remove existing roofs and installing new roof systems on each building and breezeway.

b. **Preliminary (Tentative) Schedule**. These dates are subject to change, at the District's discretion.

(1) The District anticipates awarding the Project, if it awards it at all, at its Board meeting in December 12, 2023.
(2) The District anticipates issuing a Notice to Proceed to the successful Contractor on December 22, 2023.
(3) Based on this, the District expects Project Completion on August 2, 2023.

2. **Mitigation Measures**

Contractor shall comply will all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 et. seq.) The District's Mitigation Monitoring Plan is not a Contract Document, but is referenced and available as indicated in the Existing Information and Documentation Regarding Project Site (Document 00 31 19).

3. **Site Specific Conditions**

a. **Access**. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Contractor commences Work. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by Contractor, unless, at the discretion of District, other arrangements are made in advance.

b. **Master Key**. Upon request, District may, at its own discretion, provide a master key to the school site for the convenience of Contractor. Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the master key is lost or stolen or if any unauthorized party obtains a copy of the key or access to the school.

c. **Maintaining Services**. Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

d. **Maintaining Utilities**. Contractor shall maintain in operation during term of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

e. **Work During Instructional Time**. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to the school up to, and including, rescheduling specific work activities, at no additional cost to District.

f. **No Work During Student Testing**. Contractor shall, at no additional cost to District and at District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State-required tests.

g. **Badge and Vest Policy for Contractors**. Contractor shall provide their workers and all of Subcontractors' workers, and delivery personnel or others entering the Site, with identification badges and a brightly colored construction vest. These badges and vests shall be worn by all persons who are working on the Project Site.

(1) Badges must be filled out in full and contain the following information:

a) Name of Contractor
b) Name of Employee
c) Contractor's address and phone number

(2) Badges must be worn by all these persons when on Site and must be visible at all times. Contractors must inform these persons that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request to, without limitation, confirm a person's identity and a person's right to be on Site, and in any particular area on the Site, at any time.

(3) Failure to display an identification badge and/or to wear a vest as required by this policy may result in the assessment of fines against the Contractor.

4. **Fingerprinting**

The Contractor must comply with the Criminal Background Investigation / Fingerprinting Certification (Doc. 00 45 85) by utilizing only the following method indicated (checked) and not any other method.

☐ **All Workers Fingerprinted.** The Contractor has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor's employees and all of its subcontractors' employees who interact with pupils, outside of the immediate supervision and control of the pupil's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237 (Contractor shall "require each applicant for employment in a position requiring contact with minor pupils to submit two sets of fingerprints prepared for submittal by the employer to the Department of Justice for the purpose of obtaining criminal record summary information from the Department of Justice and the Federal Bureau of Investigation."). A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may interact with District pupils during the course and scope of the Contract is attached hereto; and/or

☐ **Physical Barrier.** Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Contractor's employees and District pupils at all times; and/or

X **Continual Supervision by Fingerprinted Employee.** Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising

Contractor's employees and its subcontractors' employees is:

Name: _____ **Title:** _____

☐ **Unoccupied Site.** The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

5. **Substitutions for Specified Items**

Requests for substitutions after award of the Contract shall be submitted within **THIRTY-FIVE** (**35**) days of the date of the Notice of Award. This time period may be extended by the District only, in its sole discretion.

6. **Weather Days**

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters:

SOUTHERN CALIFORNIA: 16 Days

7. **Insurance Policy Limits**. Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than A-VII. The limits of insurance shall not be less than:

Commercial General Liability	Includes: Bodily Injury, Property Damage, Personal & Advertising Injury, Product Liability and Completed Operations	$2,000,000 each occurrence; $4,000,000 general aggregate
Automobile Liability – Any Auto	Combined Single Limit	$1,000,000 per occurrence
Excess Liability (Umbrella)		$1,000,000 per occurrence; $6,000,000 aggregate
Workers Compensation		Statutory limits pursuant to State law
Employers' Liability		$2,000,000 each incident, each disease; $2,000,000 policy limit
Sexual Abuse / Molestation		$1,000,000 each incident; $2,000,000 policy limit
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Property of Others	Combined Single Limit General Aggregate	Issued for the value and scope of Work stored off-site.

a. **Contractor's Pollution Liability Coverage**: The Contractor will procure and maintain contractor's pollution liability insurance, providing limits of $1,000,000 per occurrence and $5,000,000 the aggregate, on an occurrence form. The policy shall cover all activities and operations during construction at the Project Site. The policy must cover mold during the period of construction and throughout the statute of repose.

8. **Permits, Certificates, Licenses, Fees, Approval**

a. **Approvals, Certificates, Fees, Inspections, Licenses, Permits, Etc.**

(1) **Permits in Bid Price**. Contractor shall include in its Bid the cost of any approvals, certificates, fees, excavations, licenses, permits or similar requirements necessary for the performance of the Work ("Permits").

a) "Permits" includes, without limitation, any of the following if required: temporary or permanent building, mechanical, electrical or plumbing permits; certificates of occupancy; curb-breaking permits, highway entrance permits; water permits; etc.

b) "Permits" does not include Project Inspector fees (which will be paid by the District unless otherwise indicated herein), professional licensing, or contractors' licensing.

c) The Contractor shall be required to obtain all Permits. The Contractor shall ensure sufficient time in its Construction Schedule to secure and obtain all permits and shall not be permitted to claim a delay in the Project due to a delay in obtaining a Permit.

b. **Storm Water Permits**

(1) Contractor shall perform the Work of the Project related to being District's Qualified SWPPP (Storm Water Pollution Prevention Plan) Practitioner ("QSP").

(2) As District's QSP, Contractor shall be responsible for storm water and non-storm water visual observations, sampling, and analysis per the District's SWPPP.

(3) Contractor shall strictly follow the requirements to implement all the provisions of the SWPPP including, without limitation, preparation of monitoring and recording reports and providing those to District.

(4) Contractor's indemnity obligations are applicable to any damages, penalties, fees, charges, or related expenses assessed or charged to the District by any water boards or agencies with jurisdiction related to compliance with the Storm Water Permits.

9. **Project Inspection**

In addition to the requirements in the Contract Documents related to cooperation with and authority of the DSA Project Inspector(s) for the Project, Contractor must comply with the requirements of the most recent versions of DSA document PR 13-01. Below are provisions of this document from PR 13-01 (rev 08/21/17).

(1) The contractor shall carefully study the DSA-approved documents and shall plan a schedule of operations well ahead of time.

(2) If at any time it is discovered that work is being done which is not in accordance with the DSA-approved construction documents, the contractor shall correct the work immediately.

(3) Verify that DSA 152 and, when applicable, DSA 152-IPI forms were issued for the project prior to the commencement of construction.

(4) Meet with the design team, the Laboratory of Record and the project inspector to mutually communicate and understand the structural/material and fire/life safety testing and inspection program, and the methods of communication appropriate for the project.

(5) Notify the project inspector and, when applicable, in-plant inspector, in writing, of the commencement of construction of each and every aspect of the work at least 48 hours in advance by submitting Commencement/Completion of Work Notification (form DSA 156), or other agreed-upon written documents, to the project inspector.

(6) Notify the project inspector and, when applicable, the in-plant inspector, of the completion of construction of each and every aspect of the work by submitting form DSA 156 (or other agreed-upon written documents) to the project inspector.

(7) Consider the relationship of the signed-off blocks and sections of the form DSA 152 and the commencement of subsequent work. Until the project inspector has signed off applicable blocks and sections of the form DSA 152, the contractor may be prohibited from proceeding with subsequent construction activities that cover up the unapproved work. Any subsequent construction activities that cover up the unapproved work will be subject to a "Stop Work Order" from DSA or the school district (see IR A-13 for additional information), and are subject to removal and remediation if found to be in noncompliance with the DSA-approved construction documents.

(8) Submit the final verified report. All prime contractors are required to submit final Contractor Verified Reports (form DSA 6-C).

10. **Health & Safety.** This provision includes additional requirements related to the Contractor's responsibility related to the health of its workers and to the procedures it must follow related to COVID-19, and is in addition to the requirements already indicated in the Contract Documents including, without limitation, in the Agreement and the General Conditions.

END OF DOCUMENT

TECHNICAL SPECIFICATIONS

FOOD SERVICES RENOVATION

AT

SUSSMAN MIDDLE SCHOOL

12500 Birchdale Avenue
Downey, California 90242

DOWNEY UNIFIED SCHOOL DISTRICT
11627 Brookshire Avenue
Downey, California 90241
(562) 904-3500

DSA Application No. 03-123736

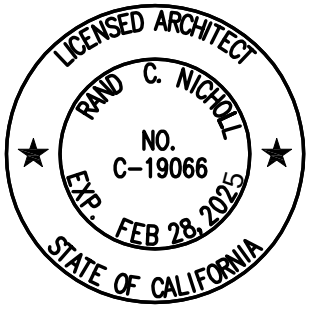
RNA Project No. 2023.10

December 13, 2023

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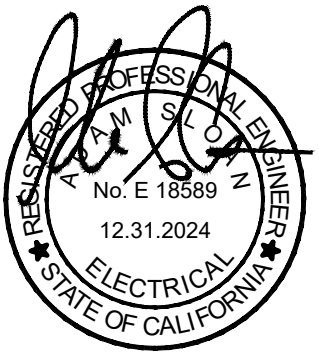
ARCHITECT

Rand Nicholl Architecture
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Yorba Linda, CA 92886
714-915-4504
License: Rand Nicholl
C-19066



ELECTRICAL ENGINEER

AG Electrical Design & Engineering
2100 west Orangewood Avenue, suite 165
Orange, CA 92868
Tel: (714) 769-9900
License: Adam Sloan
EE-18589



PLUMBING AND MECHANICAL ENGINEER

PEI Engineering
1920 E. Warner Avenue, Suite 3-H
Santa Ana, CA 92705
Tel: (714) 884-3803
Fax: (714) 884-3834
License: Matthew Pezeshki
M-29925



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SECTION 01 04 50 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements for cutting and patching.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 SUBMITTALS

A. The word “cutting” as used in the Contract Documents includes, but is not limited to, cutting, drilling, chopping, and other similar operations and the word “patching” includes, but is not limited to, patching, rebuilding, reinforcing, repairing, refurbishing, restoring, replacing, or other similar operations.

B. Cutting and Patching Proposal: Contractor shall submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Contract Documents requires approval of these procedures before proceeding. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Denote how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building’s appearance or other significant visual elements.
3. List products to be used and firms or entities that will perform this Work.
4. Indicate dates when cutting and patching will be performed.
5. Utilities: List utilities that cutting and patching operations will disturb or affect. List utilities to be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
7. Review by Architect and/or DSA prior to proceeding with cutting and patching does not waive Architect right to later require complete removal and replacement of defective Work.

3.2 QUALITY ASSURANCE

A. Requirements for structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval from Owner and/or Architect and the Division of the State Architect of the cutting and patching proposal before cutting and patching the following structural elements unless specifically detailed on the approved plans:

a. Foundation construction
b. Bearing and retaining walls
c. Structural concrete
d. Structural steel

e. Lintels
f. Timber and primary wood framing
g. Structural decking
h. Stair systems
i. Miscellaneous structural metals
j. Exterior curtain-wall construction
k. Equipment supports
l. Piping, ductwork, vessels, and equipment

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain review of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment
b. Air or smoke barriers
c. Water, moisture, or vapor barriers
d. Membranes and flashings
e. Fire protection systems
f. Noise and vibration control elements and systems
g. Control systems
h. Communication and/or data systems
i. Conveying systems
j. Electrical wiring systems

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the opinion of Architect, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

1. If possible, retain the original installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.

a. Acoustical ceilings
b. Acoustical panels
c. HVAC enclosures, cabinets, or covers
d. Gypsum board

3.3 WARRANTY

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

3.4 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.5 PREPARATION

A. Temporary support: Provide adequate temporary support of existing improvements or Work to be cut.

B. Protection: Protect existing improvements and Work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of existing improvements or Work that might be exposed during cutting and patching operations.

C. Avoid interference with operation of adjoining areas or interruption of free passage to adjoining areas.

3.6 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Carefully remove existing Work to be salvaged and/or reinstalled. Protect and store for reuse into the Work. Verify compatibility and suitability of existing substrates before starting the Work.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining Work. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting, provide hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill. Saw cut reinforcing bars and paint ends with bituminous paint except where bonded into new concrete or masonry. Cut and remove concrete paving from control joint to control joint.
4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating, backfill, or re-compaction.
5. Sheet Metal: Remove back to joint, lap, or connection. Secure loose or unfastened ends or edges and seal watertight.
6. Plaster: Cut back to sound plaster on straight lines, and back bevel edges of remaining plaster. Trim existing lath and prepare for new lath.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with required tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation. Verify conditions of existing substrates prior to executing Work.
2. Restore exposed finishes of patched areas and extend finish restoration into retaining adjoining construction in a manner that will eliminate all evidence of patching and refinishing.
3. Concrete: Maintain cut edges in a moist condition for twenty four (24) hours prior to the placement of new concrete. In lieu of this an epoxy adhesive may be provided. Finish placed concrete to match existing unless noted otherwise. Concrete shall provide a compressive strength 3,000 psi where installed to repair and/or match existing improvements, unless noted otherwise.
4. Metal Fabrications: Items to remain exposed shall have their edges cut and ground smooth and rounded.

5. Lath and Plaster: Install new lath materials to match existing and fasten to supports at 6”centers. Provide a 6” lap where new lath to adjoins existing lath. Fasten new lath as required for new Work. Restore paper backings as required. Apply a bonding agent on cut edges of existing plaster. Apply three coat plaster of the type, thickness, finish, texture, and color to match existing.
6. Gypsum Wallboard: Fasten cut edges of wallboard. Install patches with at least two opposite edges centered on supports and secure at 6” centers. Tape and finish joints and fastener heads. Patching shall be non-apparent when painted and/or finished.
7. Painting: Prepare areas to be patched, patch and paint as specified under related sections of the Contract Documents.

3.7 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged coverings to their original condition.

END OF SECTION 01 04 50

SECTION 01 10 00 - CONSTRUCTION DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. The General Conditions and Division 1 are a part of this Section and the Contract for this Work and apply to this Section as if repeated fully herein.

B. The Construction Documents include the Drawings and the Technical Specifications (including addenda, change orders, and other modifications), which are part of the Project Manual. Together with the other documents contained in the Project Manual they comprise the Contract Documents as described in the General Conditions. The Construction Documents describe the form and extent as well as the materials, products and equipment which are to be incorporated into the Work.

1.2 JURISDICTION

A. No trade jurisdictional allocation of this work is intended by the subdivision of the Construction Documents. It shall be the Contractor's sole responsibility to subdivide the Work in the manner he deems necessary. In that regard, it shall be the Contractor's responsibility to insure that all apportioned work be coordinated so as to provide complete working systems where such systems are composed of two or more components of work.

1.3 COMPLIMENTARY

A. The Drawings and Technical Specifications are complimentary and what is called for by one is called for by all. Generally, the Drawings show the composition of the various components and the Technical Specifications describe the nature and methods of incorporation of the various components. All aspects of the construction are not necessarily identified in both the Drawings and Technical Specifications. However, what is required by one is required by both. In cases of conflicting information, the Contractor is to provide the more costly option. In cases of conflicting information of equal value, Technical Specifications supersede the Drawings, Details supersede Notes and performance requirements supersede product model specifications. All cases of conflicting information shall be brought to the attention of the Architect.

1.4 USE OF MATERIALS, PRODUCTS AND EQUIPMENT

A. It is intended that all materials, products and equipment be used in the manner intended by the manufacturer. In the absence of instructions to be contrary, and where readily identifiable, the manufacturer's or his trade associations specifications and/or directions are hereby incorporated by reference. In the absence of specific manufacturer's instructions the trade associations general specifications or standards shall apply including any and all ASTM or ANSI performance and installation standards for the material, product or equipment.

1.5 INTENT OF THE DOCUMENTS

A. It is the intent of these Construction Documents to include all items and components for the proper execution of the Work, and the provisions of a complete and functional facility. In that regard all appurtenant and accessory items and components required for construction of complete and functional systems within the construction shall be provided whether specifically identified in these Construction Documents or not.

1.6 KEYNOTING

A. A keynoting system is used on the drawings for material references and notes. Refer to the Keynote Legend on the drawing for the information which relates to each keynote symbol on the respective drawing. Where provided within the drawings, keynotes reference specification sections by means of a five-digit number identifying the section where a more complete description of the item will be found. The letter suffix of the keynote is a sequential differentiation and does not relate to any corresponding reference letter in the specification. Keynotes do not describe construction means, methods, techniques, sequences, or procedures. No trade jurisdictional allocation of this work is intended by the subdivision of these keynotes. It shall be the Contractor’s sole responsibility to subdivide the work in the manner he deems necessary.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 PERFORMANCE BY THE CONTRACTOR

A. Performance by the Contractor shall be required only to the extent consistent with the Construction Documents and reasonably inferable form them as being necessary to produce the intended results.

B. "Reasonably inferable" is defined as a degree of interpretation of the documents which will provide, at the Contractor's expense, complete working systems within the parameters of the following examples, but not limited to these examples:

1. Where light fixtures or electrical appliances and equipment are indicated, it is reasonably inferable that power and circuiting be provided.
2. Where plumbing fixtures are indicated, it is reasonably inferable that waste and vent be provided and supply and or return lines.
3. Where HVAC equipment is indicated, it is reasonably inferable that structural support, power and condensate piping be provided.
4. Where casework is indicated, it is reasonably inferable that anchorage or support be provided.
5. Where waterproofing systems are indicated, it is reasonably inferable that bond breakers, protective boards, backer rods, sealants and flashing be provided.
6. Where items of work are indicated which are not prefinished it is reasonably inferable that shop or field finish is required. Finish shall be to the standard of quality specified for similar materials.

C. In providing complete working systems, in the absence of complete information, the Contractor shall be required to provide components to a standard of quality consistent with similar work specified. In the absence of such standard, he shall be entitled to provide such items at the lease cost to him consistent with industry standards.

END OF SECTION 01 10 00

SECTION 01 30 00 - SUBMITTALS

GENERAL

1.1 SECTION INCLUDES

A. Procedures for submitting to the Architect/Engineer, schedules, shop drawings, product data, samples, material lists, manuals, warranties and certificates, etc., required by individual Specification Section and procedures for submitting finish hardware schedule and segregation of contract costs to the District.

B. Wherever possible, throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by the name and catalog number of a manufacturer and by reference of recognized industry standards.

C. To ensure that specified products are furnished and installed in accordance with the design intent, procedures have been established for advance submittal of design data and for its review by the Architect.

1.2 RELATED SECTIONS

A. The General Conditions and Division 1 are part of this Section and the Contract for this Work and apply to this Section as if repeated fully herein.

B. Section 01 70 00: Contract Closeout.

C. Other Sections requiring submittals.

1.3 PROCEDURES

A. Contractor shall secure and submit Shop drawings, manufacturer's catalogs, samples, warranties, operating and instruction manuals, etc. to the Architect/Engineer for review and approval.

B. After the Architect has date-stamped, signed and reviewed submittals, with corrections noted, if any, the Architect will transmit submittals to Contractor.

1.4 SUBMITTALS

A. Approval of Submittals: Contractor shall clearly identify any deviations from the Contract Drawings and Specifications on submittals. Prior approval of any deviation by the District Architect/Engineer or his representative is required. Any deviation without said prior approval, even though stamped approved, is not acceptable.

1. Approval stamp is for design and quality only. No deviations. No quantities.

B. Deliver submittals to the Owner’s Representative. Identify project name and address, telephone number of Contractor, subcontractor and supplier. Identify, as appropriate, pertinent drawing sheets, detail numbers and Specification Section numbers. Clearly identify any deviations from Contract Documents.

C. Make submittals in accordance with the approved Construction Schedule, and approved Shop Drawing Submission Schedule, in sequence that avoids delaying work and progress of other Contractors.

D. CONTRACTOR SHALL THOROUGHLY REVIEW SUBMITTALS PRIOR TO SUBMISSION TO THE ARCHITECT/ ENGINEER.

E. Timing of Submittals:

1. In accordance with General Conditions, Contractor shall submit to Owner's Representative those Shop Drawings, Product Data, diagrams, materials lists, Samples and other submittals required by the Contract Documents.
2. The Contractor shall submit within ten (10) Days of the Award of Contract, a itemized listing of required submittals with a scheduled date for each submittal. The schedule of submittals shall provide adequate time between submittals in order to allow for proper review without negative impact to the Construction Schedule.
3. Schedule of submittals shall be related to Work progress, and shall be so organized as to allow sufficient time for transmitting, reviewing, corrections, resubmission, and re-reviewing.
4. Contractor shall coordinate submittal of related items and Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received by Owner's Representative.
5. Contractor shall revise, update and submit submittal schedule to Owner's Representative on the first of each month, or as required by Owner's Representative.
6. Contractor shall allow in the Construction Schedule, at least sixteen (16) days for Owner's Representative review following Owner's Representative receipt of submittal. For mechanical, plumbing, electrical, and other submittals requiring joint review with CMR, and/or others Contractor shall allow a minimum of eighteen (18) days following Owner's Representative receipt of submittal.
7. No adjustments to the Contract Time and/or Milestones will be authorized because of a failure to transmit submittals to Owner's Representative sufficiently in advance of the Work to permit review and processing.

F. In case of product substitution, Shop Drawing preparation shall not commence until such time Owner's Representative reviews said submittal relative to the General Conditions. Each submittal shall be accompanied by a letter of transmittal containing a complete itemized and numbered list of submitted materials. Separate letters of transmittal shall accompany each submittal from different subcontractors.

G. Resubmission: If requested, resubmit submittals in a timely manner. Resubmit as specified for initial submittal but identify as such. Indicate any changes which have been made other than those requested by the Architect.

1.5 SHOP DRAWINGS

A. Shop Drawings are original drawings prepared by Contractor, subcontractor, supplier, or distributor which illustrate some portion of work by showing fabrication, layout, setting, or erection details.

B. Draw shop drawings to an accurate scale that is large enough to indicate all pertinent features and methods.

C. Copies Required and Distribution: Unless otherwise indicated in individual specification sections, submit 6 sets of blueline prints.

1.6 PRODUCT DATA

A. Manufacturer's Standard Schematic Drawings:

1. Delete information which is not applicable to Project.

2. Supplement standard Drawings to provide additional information applicable to Project.

B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data:

1. Clearly mark each copy to identify pertinent materials, products, or models.
2. Indicate dimensions and clearances required.
3. Indicate performance characteristics and capacities.
4. Indicate wiring diagrams and controls.

C. Copies Required and Distribution: Submit 6 copies.

1.7 SAMPLES

A. Samples:

1. Submit samples of sufficient size and quantity to clearly illustrate:

a. Functional characteristics of product or material, with integral parts and attachment devices.
b. Full range of colors, textures, and patterns.

2. Provide permanent identification for each sample.
3. Color and Pattern: Whenever a choice of color or pattern is available in a specified product, submit accurate color chips and pattern charts to the Architect/Engineer for review and selection.
4. Number Required: Submit 3 of each.

B. Field Samples: When specified, erect field samples and mock-ups at project site to illustrate materials, equipment, or workmanship and to establish standards by which completed work shall be judged.

C. After return of office samples or review of field samples, these items may be used in construction of project with approval of the Architect/Engineer.

1.8 MANUALS

A. Where Manuals are required to be submitted covering items included in Work, prepare Manuals in durable binders, approximately 8-1/2" by 11" in size, and provide following information:

1. Identification on, or readable through, front cover stating general nature of manual.
2. Neatly typewritten index at front of Manual, furnishing immediate information as to location in Manual of data or equipment involved.
3. Complete instructions regarding operation and maintenance of equipment involved.
4. Complete nomenclature of replaceable parts, their part numbers, current cost, and name and address of nearest vendor of parts.
5. Copy of all Guarantees and Warranties issued.
6. Copy of approved Shop Drawings with data concerning changes made during construction.

B. Extraneous Data: Where contents of Manuals include manufacturers' catalog pages, clearly indicate precise items included in this installation and delete, or otherwise clearly indicate, manufacturers' data which is not part of this installation.

C. Number of Copies Required: Deliver 6 copies to the Architect/Engineer for review, approval and distribution. The Architect/Engineer will return 3 copies to Contractor.

1.9 CERTIFICATES

A. Submit in triplicate, in accordance with requirements of each Specification Section.

1.10 COLOR SCHEDULES

A. The District shall review and approve color schedules prepared by the Architect/Engineer and distribute the approved schedules to Contractor.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION 01 30 00

SECTION 01 40 50 - TESTING AND INSPECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Testing and inspection services to meet requirements of the California Building Code (CBC), Title 24, Parts 1 and 2, as indicated on the Drawings.

C. Tests of materials are required by a DSA certified testing AGENCY as set forth in Section 4-335 of the California Building Standards Administrative Code.

1.02 RELATED SECTIONS

Provisions of the General Conditions, Supplemental Conditions and Division 01 apply to this Specification. Specifications that are referenced or related may include:

A. Section 01 04 50: Cutting and Patching

B. Section 01 10 00: Construction Documents

C. Section 01 30 00: Submittals

D. Section 01 50 00: Construction Facilities and Temporary Controls

E. Section 01 70 00: Contract Closeout

F. Section 01 74 00: Warranties and Guarantees

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 TESTS

A. OWNER will select and provide an independent DSA approved certified testing agency (AGENCY) to conduct tests, sampling, and testing of materials. AGENCY shall have DSA Laboratory Evaluation and Acceptance (LEA) Program acceptance. Selection of material to be tested shall be by the AGENCY and not by CONTRACTOR. Lab to be approved by Architect of record/Structural Engineer (where applicable) DSA.

B. Any material shipped from the source of supply prior to having satisfactorily passed such testing and inspection, or prior to the receipt of notice from IOR such testing and inspection is not required, shall not be incorporated into the Work.

C. OWNER will select, and directly reimburse, the AGENCY for costs of all DSA required tests and inspections; however, the OWNER may be reimbursed by CONTRACTOR for such costs for re-testing of deficient Work.

D. The independent testing AGENCY is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

E. The AGENCY shall not perform any duties of CONTRACTOR.

F. CONTRACTOR shall provide an insulated curing box with the capacity for twenty (20) concrete cylinders and will relocate said box and cylinders as rapidly as required in order to provide for progress of the Work.

3.02 TEST REPORTS

A. Test reports shall include all tests performed, regardless of whether such tests indicate the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations, when and as required, shall also be reported. Reports shall indicate the material (or materials) was sampled and tested in accordance with requirements of CBC, Title 24, Parts 1 and 2, as indicated on the Drawings. Test reports shall indicate specified design strength and specifically state whether or not the material (or materials) tested comply with the specified requirements.

3.03 VERIFICATION OF TEST REPORTS

A. Each testing AGENCY shall submit to the Division of the State Architect, in duplicate, a verified report covering all tests required to be performed by that AGENCY during the progress of the Work. Such report, covering all required tests, shall be furnished prior to Substantial Completion and/or, when construction on the Work is suspended, covering all tests up to the time of Work suspension.

3.04 INSPECTION BY OWNER

A. OWNER, and its representatives, shall have access, for purposes of inspection, at all times to all parts of the Work and to all shops wherein the Work is in preparation. CONTRACTOR shall, at all times, maintain proper facilities and provide safe access for such inspection.

B. OWNER, and its representatives, shall have the right to reject materials and/or workmanship deemed defective Work and to require correction. Defective workmanship shall be corrected in a satisfactory manner and defective materials shall be removed from the premises and legally disposed of without charge to OWNER. If CONTRACTOR does not correct such defective Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, OWNER may correct such defective Work and proceed in accordance with related Articles of the Contract Documents.

C. CONTRACTOR is responsible for compliance to all applicable local, state, and federal regulations regarding codes, regulations, ordinances, restrictions, and requirements.

3.05 INSPECTOR OF RECORD

A. An Inspector of Record (IOR) shall be employed by OWNER, and approved by ARCHITECT, STRUCTURAL ENGINEER and DSA in accordance with requirements of Title 24 of the California Code of Regulations with their duties specifically defined therein. Additional DSA certified inspectors may be employed and assigned to the Work by OWNER in accordance with the requirements of California Building Standards Administrative Code with their duties as specifically defined in Section 4-333(b).

B. Inspection of Work shall not relieve CONTRACTOR from any obligation to fulfill all terms and conditions of the Contract Documents.

C. CONTRACTOR shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

3.06 TESTS AND INSPECTIONS

The following tests and inspections do not limit inspection of the Work but are required by DSA, other agencies, or are required in related Sections of the Contract Documents.

1. Concrete - CBC, Chapter 19A:

    a. Materials:

        1) Test of Materials: 1705A.3, ACI 318-14 Sections 26.12 & 26.13
        2) Portland Cement Tests: ACI 318, ASTM C 150.
        3) Concrete Aggregate: 1903A.5, ACI 318 Section 26.4.1.2, ASTM C 33.
        4) Reinforcing Bars: 1910A.2, ACI 318-14 Section 26.6.1.2
        5) Mix Designs: Table 1705A.3 Item 5, 1910A.1
        6) Admixtures: 1903A.6 ACI 318 Section 26.4.2.2 (b) and Table 26.4.2.2 (b)

    b. Quality:

        1) Proportions of Concrete: 1910A.1
        2) Mixing and Placing: Table 1705A.3 Item 5, 1910A.1
        3) Concrete Testing: 1905A.1.16, ACI 318-14 Section 26.12

    c. Inspection:

        1) Project Site Inspection: 1905A.7, 1705A.3.5
        2) Batch Plant: 1705A.3.3
        3) Weigh-Master Inspection: 1705A.3.3.1
        4) Reinforcing Bar Welding Inspection: 1705A.3.1 1903A.4.

2. Steel - CBC, Chapters 17A and 22A:

    a. Materials:

        1) Structural Steel: 2205A.1.
        2) Material Identification: 2203.A.1.

    b. Inspection and Tests:

        1) Test of Structural Steel: 1705A.2.
        2) Shop Fabrication Inspection: 1704A.2.5.
        3) Welding Inspection: 1705A.2.5.

END OF SECTION 01 40 50

SECTION 01 74 00 - WARRANTIES AND GUARANTEES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers and/or installer's standard warranties on products and special product warranties.

B. Refer to General Conditions for terms of the guarantee period for the Work.

1.2 RELATED SECTIONS

A. Section 01 04 50: Cutting and Patching

B. Section 01 30 00: Submittals

C. Section 01 70 00: Contract Closeout

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 WARRANTY REQUIREMENTS

A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties shall not relieve Contractor of the warranty of the Work incorporating such materials, products, and/or equipment. Manufacturer's disclaimers and limitations on warranties do not relieve suppliers, manufacturers, installers, and Subcontractors of the requirement to countersign special warranties with Contractor.

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

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

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

E. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement with the reinstated warranty equal to the original warranty.

F. Replacement Cost: Upon determination the Work covered by a warranty has failed and/or is defective, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. Contractor is responsible for the cost of replacing or rebuilding defective Work regardless

of whether Owner has benefited from use of the Work through a portion of its anticipated useful service life.

G. Owner Recourse: Expressed warranties made to Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which Owner can enforce such other duties, obligations, rights, or remedies.

H. Rejection of Warranties: Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

I. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, Owner reserves the right to refuse to accept the Work until Contractor presents evidence the entities required to countersign such commitments have done so.

3.2 SUBMITTALS

A. Submit written warranties to Owner's Representative prior to Final Completion of the Work. If the certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, submit written warranties as set forth in the certificate of Substantial Completion.

B. When a designated portion of the Work is partially used and/or occupied by Owner, submit properly executed warranties to OWNER'S REPRESENTATIVE within fifteen (15) days of the Partial Use or Occupancy of the designated portion of the Work.

C. When the Contract Documents require Contractor (s), or Contractor and a Subcontractor, installer, supplier or manufacturer to execute a special warranty, prepare a written document containing appropriate terms and identification, ready for execution by the required parties. Submit a draft to Owner, through the Owner's Representative, for approval fifteen (15) days in advance prior to final execution.

D. Refer to Divisions 02 through 16 for specific content requirements and particular requirements for submitting special warranties.

E. Form of Submittal: Prior to Final Completion of the Work, compile two copies of each required warranty properly executed by Contractor, or by Contractor and Subcontractor, installer, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the Specifications.

F. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½ by 11" (115 by 280 mm) paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the item or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title and/or name, and name of Contractor.
3. When warranted Work requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

END OF SECTION 01 74 00

SECTION 01 74 50 - CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The CONTRACTOR shall be solely responsible for the cleaning of the Project site.

B. Keep premises, and adjacent private and public properties free from accumulation of waste, debris and rubbish caused by construction process.

C. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus material, and clean all exposed surfaces. Remove remaining mock-ups and samples.

D. Leave Project clean and ready for occupancy.

1.2 SAFETY

A. The CONTRACTOR shall be solely responsible for cleaning safety.

B. Standards: Maintain Project in accord with Federal, State, Local safety regulations, ordinances, anti-pollution laws and insurance standards.

C. Hazard Control: Maintain Project in accord with Federal, State, Local safety regulations, ordinances, anti-pollution laws and insurance standards.

D. Conduct cleaning and disposal operations to comply with Federal, State, Local safety regulations, ordinances, and anti-pollution laws.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

A. The CONTRACTOR is solely responsible for the cleaning of all public and private property.

B. Keep premises, and adjacent private and public properties free from accumulations of waste materials and rubbish. Remove debris and dirt from public property promptly; clean sidewalks and adjacent streets daily when soiled by work performed under this Contract.

C. As often as necessary, and/or as required the CONTRACTOR shall clean site and dispose of waste materials, debris, and rubbish off the site in a legal manner. Remove all combustible materials in a legal manner.

D. Provide on-site containers for collection of waste materials, debris, and rubbish. Provide a collection can at each location used as an eating area. Pick-up and dispose of all garbage daily.

E. Remove waste materials, debris, and rubbish from site and legally dispose of at legal public or private dumping areas or recycling center off OWNER'S property.

F. Do not allow debris and combustible materials to accumulate in voids, cavities, and plenums created by wall partition, and ceiling construction. These areas must be thoroughly cleaned out before being sealed or closed off by installation of finish materials.

G. Do not allow debris to clog drains. Keep roof drains, scuppers, floor drains and area drains clean and free of debris.

H. Vacuum clean interior areas when ready to be painted, installation of carpet, installation of floor tile, etc. Refer to Sections for other provisions on preparations of finish surfaces.

I. Handle materials in a controlled manner with as few handling as possible; do not drop or throw materials from heights.

J. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on newly finished surfaces.

K. Wet down materials and rubbish to lay dust and prevent it form blowing.

3.2 FINAL CLEANING

A. Complete cleaning operations before requesting inspection for a certificate of Substantial Completion.

B. Employ experienced workers, or professional cleaners, for all final cleaning.

C. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

D. Remove labels that are not permanent labels.

E. Clean transparent materials, including mirrors and glass in doors and windows. Remove misplaced glazing compound and other substances. Replace chipped or broken mirrors, glass and other damaged transparent materials.

F. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors, walkways, and the like broom clean. Vacuum carpeted surfaces.

G. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

H. Clean the site, including landscaped areas, of rubbish litter and other foreign substances.

1. Contaminated earth:

a. Final clean-up operation includes the removal and disposal of earth contaminated or unsuitable for support of plant life in planting areas, and filling of resulting excavations with suitable soil.

b. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, and similar materials, areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and areas that have been oiled, paved, or chemically-treated.

2. Sweep paved areas broom clean; remove stains, spills and other foreign deposits.

3. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

I. The CONTRACTOR is to keep Project clean until it is occupied by OWNER.

END OF SECTION 01 74 50

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Administrative and procedural requirements for preparing, maintaining, and submitting following:
      a. Project Record Documents.
      b. Operating and Maintenance Data and Manuals.
      c. Warranties, Guarantees, and Bonds.
      d. Spare parts and Maintenance Materials.
      e. Instructions to Owner's Personnel.

B. Related Sections:
   1. Section 01 7700: Closeout Procedures; schedule of finishes.

C. Related Requirements:
   1. Refer to District's Division 00 Documents, including General Conditions, for additional requirements.
   2. Separate Specification Sections requiring Record Documents.

1.02 PROJECT RECORD DOCUMENTS

A. Dedicated Record Set:
   1. Maintain one set of Contract Drawings and one copy of Project Specifications for use during construction to record changes made during construction..
      a. Record revisions with contrasting color.
      b. Do not use record documents for construction purposes.

B. Record Documents and Shop Drawings:
   1. Record in concise and neat manner and on continual basis actual revisions to Work.
   2. Include reference to appropriate document with date revision/change was approved or directed.
   3. Changes/Revisions to Drawings and Specifications include, but are not necessarily limited to:
      a. Changes made by RFI, CCD, and CO.
      b. Changes made to shop drawings.
   4. Mark set to show actual installation where installation varies substantially from Work as originally shown.
      a. Mark whichever drawing is most capable of showing conditions fully and accurately.
      b. Where shop drawings are used, record cross-reference at corresponding location on Contract drawings.
      c. Give particular attention to concealed elements that would be difficultto measure and record at later date.
   5. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of Work.

6. Mark new information that is important to Owner, but was not shown on Contract Drawings or shop drawings.
7. Note related Change Order numbers where applicable.
8. Label each document “PROJECT RECORD” in neat large printed letters.
9. Record information concurrently with construction progress.
    a. Do not conceal Work until required information is recorded.
10. Legibly mark each item to record actual construction including:
    a. Measured depths of foundations in relation to finish first floor datum.
    b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
        1) Identify drains and sewers by invert elevation.
    c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of Work.
    d. Identify ducts, dampers, valves, access doors and control equipment wiring.
    e. Field changes of dimension and detail.
    f. Details not on original Drawings.

C. Store Record Documents and Samples in Contractor’s Field Office, separate from documents used for construction.
1. Protect record documents from deterioration and loss in secure, fire-resistive location.
2. Provide access to record documents for Architect's reference during normal working hours.
3. Provide files and racks for storage of Documents
4. Provide secure storage space for storage of samples.
5. Maintain documents in clean, dry, legible condition and in good order.
    a. Replace soiled or illegible documents.

D. Record Specifications:
1. Maintain one complete copy of Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction.
2. Legibly mark these documents and record at each product section description of actual products installed to show substantial variations in actual Work performed in comparison with text of specifications and modifications including following:
    a. Manufacturer's name, trade name, product model and number and supplier.
    b. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation, including following:
        1) Authorized product substitutions or alternates utilized.
        2) Changes made by Addenda and Modifications.
3. Note related record drawing information and product data.
4. Upon completion of Work, submit record specifications to Architect for Owner's records.

E. Owner's Project Inspector will verify that Project Record Documents are fully updated prior to approving Payment Applications.
   1. Obtain Owner's Inspector's signature on record set verifying information.

F. Record drawings will be reviewed by Architect for completeness and acceptance.

G. As-Built Drawings:
   1. Turn over to Owner in following manner:
      a. Separate each discipline (i.e. Civil, Architectural, Mechanical, Electrical, Pluming, and so on)
      b. Identify disciplines of Drawings by adding white tag.
      c. Tag each discipline.
      d. Tag Size: No. 8, 8-11/16 by 2-3/4 inches.
      e. Legibly write on tag name of Project, and discipline inside tube.
      f. Separately tube each discipline by using U-Line tube or equal.
      g. Size of Tube: 4 inches minimum and 6 inches maximum.

H. Record of Electronic (Digital) Files:
   1. Immediately before inspection of Substantial Completion, review marked-up Record Set with Architect and Owner's Inspector.
   2. When authorized, prepare full set of corrected digital files of Record Documents.
   3. Submit following documents:
      a. Scan sheets in As-Built Set, furnish annotated PDF electronic files.
      b. CD or CD's of PDF files and file labeling is to include following information:
         1) Project name.
         2) Date.
         3) Name of Architect.
         4) Name of Contractor
         5) Disciplines included in CD (i.e. Title sheet, Civil, Architectural, Structural, Mechanical, and so on)
         6) Label and index files contained in CD in sequential order to match Title Sheet of Contract Documents.

I. RFI's:
   1. Furnish one copy of RFI's questions and answers submitted on Project.
   2. Submit RFI binder in following manner:
      a. Provide binders as specified in "Record Document Storage" Article.
      b. Label binder on cover and spine: RFI's.
         1) Identify Project Name/Building Name, and Project Number on cover.
      c. Furnish tab for each individual RFI.
      d. Submit RFI Binders inside storage boxes as specified in "Record Document Storage" Article.
         1) Include two labels on face and side of box or boxes.

1.03 MAINTENANCE AND OPERATING (M&O) DATA AND MANUALS

A. Submit two sets prior to Substantial Completion inspection for Architect's review and approval.

B. Manual Format:
   1. Prepare data in form of instructional manual for use by Owner's personnel.
      a. Provide binders as specified in "Record Document Storage" Article.
      b. Identify Project Name/Building Name and Project Number on coverof manual.
   2. Table of Contents: Include in each volume, neatly typewritten.
      a. Identify Contractor, name of responsible principal, address, and phone number.
      b. List each product included, indexed to content of volume.
      c. List, with each product, name, address, and telephone number of subcontractor or installer and maintenance contractor, as appropriate and nearest source of supply for parts and replacement.
      d. Identify location of installed equipment.
      e. Submit M&O Manuals inside storage boxes as specified in "Record Document Storage" Article.
   3. Product Data:
      a. Include only those sheets which are pertinent to specific product.
      b. Annotate each sheet to clearly identify specific product or part installed.
      c. Include CD with Product Data information.
         1) Maintenance schedules and equipment list must be in editable Word or Excel spreadsheet format.
   4. Drawings:
      a. Supplement product date with Drawings as necessary to clearly illustrate relations of component parts of equipment and systems.
      b. Coordinate Drawings with information in Project Record Documentsto ensure correct illustration of completed installation.
      c. Do not use Project Record Documents as maintenance drawings.
      d. Full size and half size hard copies of Drawings are required.
   5. Copy of each warranty and service contract as specified.

1.04 RECORD DOCUMENT STORAGE

A. Binders:
   1. Commercial quality, heavy-duty, three-ring D binders with durable and cleanable vinyl-covers at front and spine, with internal pockets to hold CD.
   2. Size: 8-1/2 by 11 inches with ring size as required.
   3. Provide new white binders.

B. Storage Boxes:
   1. "Bankers Box" or equal quality.
      a. Size: 11 by 15 inches or equal size.
   2. Include two labels on face and side of box.
   3. Label boxes as follows:
      a. Use Avery Label 6573 or equal size.
      b. Type information on label, including Bid No., Project Name, and Number of boxes (i.e. Box 1 of 5).
         1) Refer to attached sample label at end of this Section.
         2) Font for Labels:

a) Vernada, 48 point for Bid No.
b) Vernada, 16 point for remainder of content on label.

1.05 WARRANTIES, GUARANTEES, AND BONDS

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

B. Manufacturer's warranties and guarantees not withstanding, warrant entire Work against defects in materials and workmanship for twelve months from Date of Acceptance of Substantial Completion.
1. Warranties and guarantees between Contractor and Owner are not affected by warranties and guarantees between Contractor and manufacturers and Contractor and suppliers.

1.06 WARRANTY REQUIREMENTS

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

B. Reinstatement of Warranty:
1. When Work covered by warranty has failed and been corrected by replacement or rebuilding, reinstate warranty by written endorsement.
2. Provide Reinstated Warranty equal to original warranty with equitable adjustment for depreciation.

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

D. Owner's Recourse:
1. Written warranties made to Owner are in addition to implied warranties, and do not limit duties, obligations, right and remedies otherwise available under law, nor are warranty periods be interpreted as limitations on time in which Owner can enforce such other duties, obligations, rights, or remedies.
2. Rejection of Warranties:
a. Owner reserves right to reject warranties and to limit selections to products with warranties not in conflict with requirements of Contract Documents.

E. Owner reserves right to refuse to accept Work for Project where special warranty, certification, or similar commitment is required on such Work or part of Work, until evidence is presented that entities required to countersign such

commitments are willing to do so.

F. Submit warranties and guarantees to Contractor for Architect's review and approval prior to final payment.

G. Do not start warranty period for delayed warranty items, until items have been completed.

H. Furnish two original copies with wet signatures of warranties and guarantees on Project.

I. Organize warranties/guarantees into orderly sequence based on Table ofContents in Project Specifications:
   1. Bind warranties/guarantees in 8-1/2 by 11 inch heavy-duty, three ring binders, same as specified in "Maintenance And Operating (M&O) Data and Manuals" Article.
   2. Identify each binder on front and spine with printed sheet "WARRANTIES", project name and name of contractor.
   3. Contractor to issue Contractor's and Subcontractor's Warranties/Guarantees using attached Warranties/Guarantees form found at end of this Section.

1.07 SUBMITTALS

A. Submit written warranties to Architect prior to date certified for Substantial Completion.
   1. When Architect's Certificate of Substantial Completion designates commencement date for warranties other than date of Substantial Completion for Work, or designated portion of Work, submit written warranties upon request of Architect.

B. Schedule of Finishes:
   1. Submit Schedule of Finishes as specified in Section 017700.

PART 2 PRODUCTS *(Not Applicable)*

PART 3 EXECUTION *(Not Applicable)*

END OF SECTION 01 7839

SECTION 02 07 00 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

B. Related Sections:

1. 01 04 50 Cutting and Patching

C. Definitions: As follows:

1. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the District’s property.
2. Remove and Salvage: Items indicated to be removed and salvaged remain the District’s property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to District’s designated storage area.
3. Salvage and Reuse In New Work: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in locations indicated.
4. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
5. Replace: Remove and legally dispose of existing item(s) inidicated and install new like item(s) that conform(s) to project specifications.

D. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the District’s property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

E. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."

1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

F. Regulatory Requirements: Comply with local governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction including, but not limited to, the City of Santa Ana. Comply with California Fire Code Article 87.

G. District will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that District's operations will not be disrupted. Provide not less than 72 hours' notice to District of activities that will affect District's operations.

H. District assumes no responsibility for actual condition of buildings to be selectively demolished.

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

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 GENERAL

A. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.

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

C. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

D. Utility Requirements: Locate, identify, shut off, disconnect, and seal or cap off indicated utility services serving building to be selectively demolished.

1. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.

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

F. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

G. Conduct demolition operations to prevent injury to people and damage to adjacent buildings, facilities, and site improvements to remain. Ensure safe passage of people around selective demolition area.

1. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
3. Cover and protect furniture, furnishings, and equipment that have not been removed.

H. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to be selectively demolished.

I. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

J. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

K. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

L. Remove structural framing members and lower to ground by method suitable to avoid free fall.

M. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

N. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

O. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

P. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.

Q. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

END OF SECTION 02 07 00

SECTION 05 50 00 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes:

1. Non-structural metal fabrications.
2. Prefabricated metal products and equipment.
3. Metal fasteners and connectors not specified elsewhere.

B. Related Sections:

1. Drawings and general provisions of the Contract, including Bidding and Contract Requirements, General and Supplementary Conditions and Division 1 Specifications, apply to this section.

C. Submittals:

1. Comply with pertinent provisions of Section 01 30 00.
2. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products to be used in the fabrication of miscellaneous metal fabrications, including paint products.
3. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal assemblies. Include plans and elevations at not less than 2" to 1'-0" scale, and include details of sections and connections at not less than 3" to 1'-0" scale. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

D. Quality Assurance

1. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting wherever taking field measurements before fabrication might delay work.
2. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

PART 2 - PRODUCTS

2.1 General: For work exposed to view use materials selected for their smoothness and freedom from surface blemishes. All metal exposed to weather shall be hot-dipped galvanized after fabrication except for portions embedded in concrete or enclosed within weather tight construction.

A. Steel Plates, Shapes, and Bars: ASTM A 36.

B. Slotted Channel Framing: Cold-formed metal channels with flanges returned toward web with 9/16 inch wide slotted holes in webs at 2 inches o.c. 1 5/8 inches width and depth. Galvanized steel

complying with ASTM A 653/A 653M, structural quality, Grade 33 (Grade 230), with G90 (Z275) coating; 0.079-inch nominal thickness. Painted.

C. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A 153.

D. Expanded-Metal Lath: Fabricate expanded-metal lath from zinc-coated (galvanized) steel sheet to produce lath complying with ASTM C 847. Flat, diamond mesh, 3.4 lb/sq. Yd.

E. Fasteners: Provide bolts, nuts, lag bolts, machine screws, wood screws, lock washers as required for application indicated and complying with applicable Federal standards. Hot-dip galvanize fasteners for exterior applications to comply with ASTM A 153.

F. Shop Primer for Ferrous Metal: Manufacturer's or Fabricator's standard, fast-curing, lead-free, universal modified alkyd primer; resistant to normal atmospheric corrosion, compatible with finish paint systems indicated, capable of providing a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645.

G. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12 except containing no asbestos fibers.

H. Zinc Chromate Primer: FS TT-P-645.

I. Shop Painting: Apply shop primer to surface of metal fabrications except those embedded in concrete or galvanized; comply with SSPC-PA1 and requirements indicated below:

J. Galvanizing: ASTM A 123, A 153 and A386, as applicable, for fabricated and un-fabricated steel products made of uncoated rolled, pressed and forged steel shapes, plates, bars and strip 0.0229 inch and thicker.

K. Galvanizing Repair Paint: High zinc dust content paint with dry film containing not less than 94 percent zinc dust by weight, complying with DOD-P-21035 or SSPC-Paint-20.

L. Fabrication, General: Use materials of size and thickness shown, or, if not shown, of required size, grade and thickness to produce strength and durability in finished product. Shop-paint all items not specified to be galvanized after fabrication.

M. Rough Hardware: Furnish custom-fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes for framing and supporting and anchoring woodwork.

1. Galvanize per ASTM A153, unless otherwise indicated.

N. Miscellaneous Framing and Supports: Provide as required to complete work and not included with structural steel framework. Fabricate of welded construction in as large units as possible; drill and tap as required to receive hardware and similar items. Include required anchors for building into other work; spaced not more than 24 inches o.c.

O. Steel Pipe Railings: Fabricate pipe railings to dimensions and details shown, with smooth bends and welded joints ground smooth and flush. Where details are not shown, use 1-1/4", extra strong, standard steel pipe with top of top rail 42" above floor, or 36" above stair treads measured vertically at the stair riser line. Adjust railings prior to anchoring to ensure matching alignment at

butting joints. Space posts not more than 8' on centers, unless otherwise shown. Plumb posts in each direction. Secure posts and rail ends to buildings construction as follows:

1. Anchor posts in concrete by means of pipe sleeves set and anchored into concrete. Provide sleeves of galvanized, standard weight, steel pipe, not less than 6" long, and having an inside diameter not less than 1/2" greater than the outside diameter of the inserted pipe post. Provide steel plate secured to bottom of sleeve of width and length not less than 1" greater than outside diameter of sleeve. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink grout, molten lead, or sulphur. Cover anchorage joint with a round steel flange welded to post. Anchor rail ends into concrete and masonry with steel round flanges welded to rail ends and anchored into wall construction with lead expansion shields and bolts.
2. Anchor posts to steel with steel oval flanges, angle type or floor type, as required by conditions, welded to posts and bolted to steel supporting members.
3. Secure handrails to walls by means of wall brackets, and wall return fitting at handrail ends. Provide brackets to provide 1½” clearance from finish wall surface , and with wall plate portion of bracket drilled to receive one 3/8" bolt. Locate brackets not more than 60" o.c. Provide flush type wall return fittings with same projections as that specified for wall brackets. Secure wall brackets and wall return fittings to building construction as follows:

    a. Use bolt anchor expansion shields and lag bolts.

P. Railings and Handrails: CBC Section 11B-505

1. Top of gripping surfaces of handrails shall be 34” minimum and 38” maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above such surfaces.
2. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 ½” minimum. Handrail may be located in a recess if the recess if 3” maximum deep and 18’ minimum clear above the top of the handrail.
3. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for than 20% of their length. Where provided, horizontal projections shall occur 1 ½” minimum below the bottom of the handrail gripping surfaces.
4. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4” minimum and 2” maximum.
5. Handrail gripping surfaces with a non-circular cross section shall have an outside dimension of 4” minimum and 6 ¼” maximum, and a cross-sectional dimension of 2 ¼” maximum.
6. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.
7. Handrails shall not rotate within their fittings.
8. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with CBC Section 11B-505.10. Such extensions are not required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.

PART 3 - EXECUTION

A. Perform cutting, drilling and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels. Provide anchorage devices and fasteners where necessary for installation to other work.

B. Set loose items on cleaned bearing surfaces, using wedges or other adjustments as required. Solidly pack open spaces with bedding mortar, consisting of 1-part Portland cement to 3-parts sand and only enough water for packing and hydration, or use commercial non-shrink grout material.

C. Touch-up shop paint after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used in shop. Use galvanizing repair paint on damaged galvanized surfaces.

END OF SECTION 05 50 00

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Submittals: Submit the following:

1. Wood treatment data, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials.

PART 2 - PRODUCTS

A. Lumber, General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by the American Lumber Standards Committee's (ALSC) Board of Review. Provide dressed lumber, S4S, with each piece factory marked with grade stamp of inspection agency.

1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.

2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

B. Wood-Preservative-Treated Materials: Comply with applicable requirements of AWPA U1 (lumber) and AWPA M4 (plywood) per CBC 2303.1.8. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.

1. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:

    a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
    b. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
    c. Wood framing members less than 18 inches (460 mm) above grade.
    d. Wood floor plates installed over concrete slabs directly in contact with earth.

2. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m).

3. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

C. Quality Assurance

1. Lumber Grading Agency: Certified by specified agency and approved by Division of State Architect.

2. Plywood Grading Agency: Certified by specified agency and approved by Division of State Architect.

3. Provide Certificate of Inspection or grade mark by an approved inspection agency on each piece of lumber and plywood, indicating compliance with applicable standards or grading rules specified in the referenced standards and this Section.

4. Provide quality mark by an approved inspection agency on each piece of preservative-treated lumber and plywood, indicating compliance with applicable standards or grading rules specified in the referenced standards and this Section.

5. Provide on-site or other approved quality control program acceptable to Architect and designed to test lumber materials prior to installation in order to demonstrate compliance with moisture content criteria.

PART 3 - EXECUTION

A. General:

1. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

2. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

3. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

4. Countersink nail heads on exposed carpentry work and fill holes.

5. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

B. Wood Grounds, Nailers, Blocking And Sleepers:

1. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

3. Provide permanent grounds of dressed, preservative treated, key- bevelled lumber not less than 1-1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

C. Wood Furring:

1. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finished work.

2. Firestop furred spaces on walls at each floor level and at ceiling line of top story, with wood blocking or noncombustible materials, accurately fitted to close furred spaces.

3. Furring to Receive Gypsum Drywall: Unless otherwise indicated, provide 1" x 2" furring at 16" o.c., vertically.

4. Suspended Furring: Provide size and spacing shown, including hangers and attachment devices. Level to a tolerance of 1/8" in 10', except 1/4" in 10' for thick-coat plaster work.

D. Wood Framing, General:

1. Provide framing members of sizes and on spacings shown, and frame openings as shown, or if not shown, comply with recommendations of 2013 California Building. Do not splice structural members between supports.

2. Anchor and nail as shown, and to comply with 2013 California Building.

3. Firestop concealed spaces of wood framed walls and partitions, including furred spaces, at each ceiling and floor level, at intervals not exceeding 10 feet vertically, and at the ceiling line of the top story. Where firestops are not automatically provided by the framing system used, use closely-fitted wood blocks of nominal 2" thick lumber of the same width as framing members. Firestop shall be provided as delineated in Section 708.2 CBC.

E. Installation of Construction Panels:

1. General: Comply with applicable recommendations contained in Form No. E 30F, "APA Design/Construction Guide - Residential & Commercial," for types of plywood products and applications indicated.

2. Fastening Methods: Fasten panels as indicated on plans.

END OF SECTION 06 10 00

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:

   1. Section 08 71 00 "Door Hardware" for door hardware for flush wood doors.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is a licensee of WI's Certified Compliance Program.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.

C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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. Architect approved by submittal.

B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 ACCESSIBILITY REQUIREMENTS

A. Comply with applicable provisions in the CBC and the 2010 ADA Standards for Accessible Design.

B. Doors, Doorways, and Gates:

1. General: Doors, doorways, and gates that are part of an accessible route shall comply with CBC Section 11B-404 per CBC Section 11B-404.1.

a. Exceptions:

1) Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with CBC Sections 11B-404.2.7, 11B-404.2.8, 11B-4042.9, 11B-404.3.2, and 11B-404.3.4 through 11B-404.3.7. A sign visible from the approach side complying with CBC Section 11B-703.5 shall be posted stating "ENTRY RESTRICTED AND CONTROLLED BY SECURITY PERSONNEL."
2) At detention and correctional facilities, doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with CBC Sections 11B-404.2.7, 11B-404.2.8, 11B-4042.9, 11B-404.3.2, and 11B-404.3.4 through 11B-404.3.7.

2. Manual Doors, Doorways, and Manual Gates: Manual doors and doorways and manual gates intended for user passage shall comply with CBC Section 11B-404.2 per CBC Section 11B-404.2.

a. Revolving Doors, Gates, and Turnstiles: Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route per CBC Section 11B-404.2.1.
b. Double-Leaf Doors and Gates: At least one of the active leaves of doorways with two leaves shall comply with CBC Sections 11B-404.2.3 and 11B-404.2.4 per CBC Section 11B-404.2.2.
c. Clear Width: Openings shall provide a clear width of 32 inches (813 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (914 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (864 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the finish floor or ground shall not exceed 4 inches (102 mm) per CBC Section 11B-404.2.3 and CBC Figure 11B-404.2.3.

1) Exceptions:

a) In alterations, a projection of 5/8 inch (15.9 mm) maximum into the required clear width shall be permitted for the latch side stop.
b) Door closers and door stops shall be permitted to be 78 inches (1981 mm) minimum above the finish floor or ground.

d. Maneuvering Clearances: Minimum maneuvering clearances at doors and gates shall comply with CBC Section 11B-404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance per CBC Section 11B-404.2.4.

1) Swinging Doors and Gates: Swinging doors and gates shall have maneuvering clearances complying with CBC Table 11B-404.2.4.1 per CBC Section 11B-404.2.4.1.
2) Doorways Without Doors or Gates, Sliding Doors, and Folding Doors: Doorways less than 36 inches (914 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with CBC Table 11B-404.2.4.2 per CBC Section 11B-404.2.4.2.
3) Recessed Doors and Gates: Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (457 mm) of the latch side at an interior doorway, or within 24 inches (610 mm) of the latch side of an exterior doorway, projects more than 8 inches (203 mm) beyond the face of the door, measured perpendicular to the face of the door or gate per CBC Section 11B-404.2.4.3.
4) Floor or Ground Surface: Floor or ground surface within required maneuvering clearances shall comply with CBC Section 11B-302. Changes in level are not permitted per CBC Section 11B-404.2.4.4.
   a) Exception:

      1. Slopes not steeper than 1:48 shall be permitted.
      2. Changes in level at thresholds complying with CBC Section 11B-404.2.5 shall be permitted.

e. Thresholds: Thresholds, if provided at doorways, shall be 1/2 inch (12.7 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with CBC Sections 11B-302 and 11B-303 per CBC Section 11B-404.2.5.

1) Thresholds: Thresholds at doorways shall not exceed 3/4 inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or 1/2 inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50 percent slope) per CBC Section 1010.1.7.

2.3 FLUSH WOOD DOORS, GENERAL

A. Quality Standard: In addition to requirements specified, comply with AWI's, AWMAC's, and WI's "Architectural Woodwork Standards and WDMA I.S.1-A, "Architectural Wood Flush Doors."

1. Provide WI Certified Compliance Labels indicating that doors comply with requirements of grades specified.
2. Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.

2.4 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

C. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08 80 00 "Glazing."

2.5 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors unless otherwise indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

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

3.2 INSTALLATION

A. Hardware: For installation, see Section 08 71 00 "Door Hardware."

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING

A. Adjust operating door hardware to function smoothly as recommended by manufacturer.

1. For doors accessible to people with disabilities, adjust closers so that from an open position of 90 degrees, the time required to move the door to a position 12 degrees from the latch is not less than 5 seconds.
2. For doors accessible to people with disabilities, adjust spring hinges so that from an open position of 70 degrees, the time required to move the door to the closed position is not less than 1.5 seconds.

B. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including flush wood doors that are warped, bowed, or otherwise unacceptable.

C. Operation: Rehang or replace doors that do not swing or operate freely.

3.4 CLEANING AND TOUCHUP

A. Finished Doors: 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.

END OF SECTION 08 14 16

SECTION 08 11 13 - HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. standard hollow metal frames.

B. Related Requirements:

1. Section 08 14 16 "Flush Wood Doors" for wood doors installed in hollow-metal frames.
2. Section 08 71 00 "Door Hardware" for door hardware for hollow-metal doors and wood doors installed in hollow-metal frames.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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. Architect approved by submittal.

2.2 STANDARD STEEL FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Frames: SDI A250.8, Level 3; SDI A250.4, Level A.

1. Frames:

    a. Materials: Metallic-coated steel sheet, not less than 0.053 inch (1.3 mm) thick, 16 gage, with not less than A40 (ZF120) coating.
    b. Construction: Full profile welded.

2. Exposed Finish: Prime.

2.3 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor.

B. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

2.4 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.5 FABRICATION

A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

B. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.

B. Hollow-Metal Frames: Comply with SDI A250.11.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
b. Install frames with removable stops located on secure side of opening.

2. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:

a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.2 ADJUSTING

A. Adjust operating door hardware to function smoothly as recommended by manufacturer.

1. For doors accessible to people with disabilities, adjust closers so that from an open position of 90 degrees, the time required to move the door to a position 12 degrees from the latch is not less than 5 seconds.
2. For doors accessible to people with disabilities, adjust spring hinges so that from an open position of 70 degrees, the time required to move the door to the closed position is not less than 1.5 seconds.

B. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

C. Operation: Rehang or replace doors that do not swing or operate freely.

3.3 CLEANING AND TOUCHUP

A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of the same material as used for shop painting.

1. Comply with requirements in Section 09 96 00 "High-Performance Coatings."

B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 08 11 13

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.2 SUMMARY

A. Section Includes: Finish hardware except as otherwise specified or specifically omitted herein.

B. Related Sections:

1. Section 08 11 13 - Hollow Metal Frames.
2. Section 08 14 16 - Flush Wood Doors.

C. Doors and doorways that are part of an accessible route shall comply with CBC Section 11B-404.

D. The clear opening width for a door shall be 32 inches minimum. For a swinging door it shall be measured between the face of the door and the stop, with the door open 90 degrees. There shall be no projections into the opening below 34 inches and 4 inches maximum projections into the opening between 34 inches and 80 inches above the finish floor or ground. Door closers and stops shall be permitted to be 78 inches minimum above the finish floor or ground. CBC Section 11B-404.2.3.

E. Handles, pulls, latches, locks, and other operable parts on accessible doors shall comply with CBC Section 11B-309.4 and be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Operable parts of such hardware shall be 34 inches minimum and 44 inches maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides. CBC Section 11B-404.2.7.

F. The force for pushing or pulling open a door shall be as follows: CBC Section 11B-404.2.9.

1. Interior hinged doors, sliding or folding doors, and exterior hinged doors: 5 lbs. (22.2N) maximum.

G. Door closing speeds shall be as follows: CBC Section 11B-404.2.8.

1. Closer shall be adjusted so that the required time to move a door from an open position of 90 degrees to a position of 12 degrees from the latch is 5 seconds minimum.
2. Spring hinges shall be adjusted so that the required time to move a door from an open position of 70 degrees to the closed position is 1.5 seconds minimum.

H. Thresholds shall comply with CBC Section 11B-404.2.5.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at Site: Individually package each unit of finish hardware complete with proper fastening and appurtenances, clearly marked on the outside to indicate contents and specific locations in the Work.

B. Deliver packaged hardware items at the times and to the locations (shop or field) for installation, as directed by the Contractor.

1.8 PROJECT CONDITIONS

A. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.

B. Upon request, check the Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.

1.9 WARRANTY

A. Provide guarantee from hardware supplier as follows:

1. Closers: Five years, except electronic closers, two years.
2. Exit Devices: Two years.
3. All other Hardware: Two years.

PART 2 - MATERIALS

2.1 MANUFACTURERS

A. Approval of manufacturers other than those listed shall be in accordance with paragraph 1.4 A.

Item:	Manufacturer:	Acceptable Substitute:
Butt Hinges	Hager	McKinney, Ives
Locksets	Schlage	Owners standard
Cylinders	Schlage	Owners standard
Exit Devices	Von Duprin	Owners standard
Surface Closers	LCN	Owners standard
Kick Plates	Trimco	Rockwood, Ives
Door Stops	Trimco	Rockwood, Ives
Thresholds/Sweeps/Seals	Pemko	Reese, NGP

B. Furnish items of hardware required to complete the work in accordance with these specifications and the manufacturers' instructions. Items of hardware not specified shall be provided even though inadvertently omitted from this specification. Items shall be of equal quality and type.

C. Where the exact types of hardware specified are not adaptable to the finished shape or size of the members requiring hardware, furnish suitable types having as nearly as practicable the same operation and quality as the type specified, subject to Architect's approval.

D. Carefully inspect Project for the extent of the finish hardware required to complete the Work. Where there is a conflict between these specifications and the existing hardware, furnish finish hardware to specification.

2.2 MATERIALS

A. Locksets: Locksets and latchsets shall be as specified. Strikes shall be 16 gage curved steel, bronze or brass with 1" deep box construction, and have lips of sufficient length to clear trim and protect clothing.

1. Comply with requirements of local security ordinances.
2. Lock Series and Design: Schlage L series 06 lever and Schlage ND series Rhodes lever.

B. Butt Hinges: Outswinging exterior doors shall have nonremovable (NRP) pin. Hinge open widths shall be minimum, but of sufficient size to permit door to swing 180 degrees.

1. Furnish 3 hinges per leaf to 7 foot, 6 inch height. Add one for each additional 30 inches in height or fraction thereof.
2. Provide 5 inch heavy weight hinges on doors over 3 feet, 5 inches width.

C. Surface Door Closers: Full rack and pinion type with removable non-ferrous case. Provide sex bolts and grommets at wood doors. Place closers inside building, stairs, and rooms. Closers shall be non-handed, non-sized, and installed to permit door to swing 180 degrees.

1. Flush transom offset brackets shall be used where parallel arm closers are listed for doors with fixed panels over.
2. Provide drop plates, shoe supports, and blade stop spacers as required at narrow top rails.

D. Protection Plates: Provide kick, armor, or mop plates with four beveled edges, .050 inches minimum thickness, height called for in schedule by width less 2-inches. Furnish with machine or wood screws of bronze or stainless steel to match other hardware.

E. Silencers: Furnish silencers for interior hollow metal frames, 3 for single doors, 2 for pairs of doors.

F. Thresholds: Change in level between 1/4 inch and 1/2 inch shall be beveled with a slope no greater than 1 unit vertical to 2 units horizontal (50 percent slope). The floor or landing shall not be more than 1/2 inch lower than the threshold or doorway.

2.3 FINISH

A. Generally to be BHMA 626 Satin Chrome.

1. Areas using BHMA 626 shall have push, pulls and kick plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

B. Factory paint door closers to match other hardware, unless otherwise noted.

C. Aluminum items shall be finished to match predominant adjacent material. Seals to coordinate with frame color.

2.4 KEYING REQUIREMENTS

A. Contact the District Locksmith with Garden Grove Unified School District for keying requirements. Keying system shall be coordinated with the Owner and approved by Owner's representative in writing.

1. Key system shall be Schlage Everest “D” keyway, FSIC, zero bitted. Provide Primus high-security cores at exterior doors only.

B. Initiate and conduct meeting with the Owner to determine system keyway, keybow style, structure, and degree of geographic exclusivity. Furnish Owner’s written approval of the system.

C. Provide temporary keyed-alike cores for construction keying. Remove at substantial completion and install permanent cylinder cores in Owner’s presence. Demonstrate that construction key no longer operates.

D. Permanent keys and cylinder cores shall be delivered only to the Owner via secured shipment. Permanently inscribe each key with number that identifies cylinder manufacturer key symbol, and notation “DO NOT DUPLICATE”.

PART 3 - EXECUTION

3.1 HARDWARE LOCATIONS:

A. Lockset: 34 to 44 inches above finished floor. Verify manufacturers’ template with door design.

B. Door Pull: 40 inches from bottom of door to center of pull.

C. Conform to CCR, Title 24, Part 2, and ADA for positioning requirements for accessibility.

3.2 INSTALLATION

A. Pre-Installation Meetings: Initiate and conduct with supplier, installer, and related trades, coordinate materials and techniques, and sequence complex hardware items and systems installation. Include manufacturers’ representatives of locks, panic hardware, and door closers in the meetings.

B. Install each hardware item per manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

3.3 ADJUSTING

A. Adjust and check each operating item of hardware and each door, to ensure proper operation or

function of every unit. Replace units which cannot be adjusted to operate freely and smoothly.

B. Inspection: Hardware supplier shall inspect hardware furnished within 10 days of contractors request and include with his guarantee a statement that this has been accomplished. Inspector or Contractor will sign off the hardware as being complete and correctly installed and adjusted. Further corrections of defective material shall be the responsibility of his representative.

3.4 SCHEDULE OF DOOR HARDWARE

A. Legend of listed manufacturers:

HAG	Hager
LCN	LCN
PEM	Pemko
SCH	Schlage
TRM	Trimco

B. The last column in the Hardware Schedule refers to the manufacturer listed above.

HW-1
Each single door to have

3	HINGE	AB700 – 4.5 x 4.5	652	HAG
1	LOCKSET	ND85PD x RHO	626	SCH
1	PERMANENT CORE	23-030	626	SCH
1	SURFACE CLOSER	4040XP-EDA	689	LCN
1	KICK PLATE	K0050 - 10 x 2 LDW x B4E	630	TRM
1	WALL BUMPER	1270WV	626	TRM
1 SET	DOOR SEALS	BY FRAME MFR	---	---
1	THRESHOLD	PER SILL DETAIL	628	PEM

END OF SECTION 08 71 00

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.

B. Related Requirements:

1. Section 09 22 16 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
2. Section 09 30 13 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Product Data: For adhesives and sealants, indicating VOC content.
3. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
4. Laboratory Test Reports: For ceiling and wall materials, indicating compliance with requirements for low-emitting materials.
5. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

B. All materials shall be delivered in original bundles bearing the brand name, if any; applicable standard designation; and name of the manufacturer or supplier for whom the product is manufactured.

1. The plastic packaging used to wrap gypsum panel products for rail and/or truck shipment is intended to provide temporary protection from moisture exposure during transit only and is not intended to provide protection during storage after delivery. Such plastic packaging shall be removed immediately upon receipt of the shipment.

a. Failure to remove protective plastic shipping covers can result in condensation which can lead to damage, including mold.

C. All materials shall be kept dry. Gypsum panel products shall be neatly stacked flat with care taken to prevent sagging or damage to edges, ends, and surfaces.

1. Gypsum panel products and accessories shall be properly supported on a level platform, and fully protected from weather, direct sunlight exposure, and condensation.

D. Gypsum panel products shall be protected from elements before, during, after construction

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

1. Gypsum panels installed in areas that are not enclosed and conditioned shall have fiberglass mat laminated to both sides and manufacturer's 12 month exposure warranty.

C. Do not install panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions in CBC Chapter 25.

B. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

C. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1. Exterior Wall STC Rating: Not less than 50 unless otherwise indicated.
2. Interior Wall STC Rating: Not less than 40 unless otherwise indicated.

2.2 REGULATORY REQUIREMENTS

A. All insulation provided for use on this project shall be identified as required by Section 12-13-1557 of the California Referenced Standards Code (Part 12, Title 24, C.C.R.); Chapter 12-13 "Standards For Insulating Material", (See Part 6, Title 24, C.C.R.); Department Of Consumer Affairs, Bureau of Home Furnishings and Thermal Insulation; Article 3: "Standards for Insulating Material".

2.3 SUSTAINABILITY REQUIREMENTS

A. Comply with applicable provisions in the CGBC.

B. Recycled Content of Steel Products: Recycled content not less than 20 percent.

C. Recycled Content of Gypsum Panel Products: Recycled content not less than 20 percent by weight.

2.4 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 1396/C 1396M.

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 Gypsum.
    b. CertainTeed Corporation.
    c. Continental Building Products, LLC.
    d. Georgia-Pacific Gypsum LLC.
    e. National Gypsum Company.
    f. PABCO Gypsum.
    g. USG Corporation.

2. Thickness: 5/8 inch.
3. Long Edges: Tapered.

B. Abuse-Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.

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 Gypsum.
    b. CertainTeed Corporation.
    c. Continental Building Products, LLC.

d. Georgia-Pacific Building Products.
e. National Gypsum Company.
f. PABCO Gypsum.
g. Temple-Inland Building Products by Georgia-Pacific.
h. USG Corporation.

2. Core: 5/8 inch (15.9 mm), Type X.
3. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 2 requirements in corridors and Level 3 requirements in gymnasiums and locker rooms.
4. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 2 requirements in corridors and Level 3 requirements in gymnasiums and locker rooms.
5. Soft-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 2 requirements in corridors and Level 3 requirements in gymnasiums and locker rooms.
6. Long Edges: Tapered.
7. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:

a. Cornerbead.
b. LC-Bead: J-shaped; exposed long flange receives joint compound.
c. L-Bead: L-shaped; exposed long flange receives joint compound.
d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
e. Expansion (control) joint.
f. Curved-Edge Cornerbead: With notched or flexible flanges.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.

D. Sound-Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Acoustical Sealant: As specified in Section 07 92 19 "Acoustical Joint Sealants."

F. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges

against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4 to 3/8 inch (6.4 to 9.5 mm) wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4 to 1/2 inch (6.4 to 12.7 mm) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. STC-Rated Assemblies: 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. Comply with ASTM C 919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: As substrate for acoustical tile and where indicated on Drawings.
2. Type X: Unless otherwise indicated.
3. Abuse-Resistant Type: Where indicated on Drawings.
4. Mold-Resistant Type: Where indicated on Drawings.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) or horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.

b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.

3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated on Drawings or, if not indicated, according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners unless otherwise indicated.
2. LC-Bead: Use at exposed panel edges unless otherwise indicated.
3. L-Bead: Use where indicated.
4. U-Bead: Use where indicated.
5. Curved-Edge Cornerbead: Use at curved openings.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 3: At panel surfaces that will not be exposed to view such as those in mechanical and electrical rooms, panel surfaces that are substrate for plastic paneling (FRP) and acoustical tile, and where indicated on Drawings.

a. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."

3. Level 4: At panel surfaces that are substrate for wall coverings and panel surfaces that will be exposed to view unless otherwise indicated.

a. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 29 00

SECTION 09 30 13 - CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Glazed wall tile.
   2. Tile backing panels.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Verification:

   1. Full-size units of each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide full sheets of each color blend.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

D. Store liquid materials in unopened containers and protected from freezing.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.

1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.

1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.

2.2 ACCESSIBILITY REQUIREMENTS

A. Comply with applicable provisions in the CBC and the 2010 ADA Standards for Accessible Design.

B. Floor or Ground Surfaces:

1. General: Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with CBC Section 11B-302 per CBC Section 11B-302.1.

C. Thresholds: Thresholds, if provided at doorways, shall be 1/2 inch (12.7 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with CBC Sections 11B-302 and 11B-303 per CBC Section 11B-404.2.5.

2.3 TILE PRODUCTS

Ceramic floor and wall Tile
Face Size: Nominal 4 inches by 4 inches
Nominal Thickness: 5/16 inch
Surface/Texture: Semi-Gloss
Color: Arctic White 0190.
Manufacturer: Daltile Semi-Gloss.

2.4 GROUT MATERIALS

A. High-Performance Tile Grout: ANSI A118.7.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Custom Building Products; Prism Color Consistent Grout, or a comparable product by another manufacturer.

2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with bonded mortar bed comply with surface finish requirements in ANSI A108.01 for installations indicated.

    a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
    b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.

3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

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

3.2 PREPARATION

A. Where indicated, prepare substrates to receive crack isolation membrane by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot (1:50) toward drains.

B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:

    a. Tile floors in wet areas.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.

F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
4. Joints between tiles shall be continuous straight lines unless otherwise indicated.

G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Floor Tile: 1/8 inch (3.2 mm).
2. Glazed Wall Tile: 1/8 inch (3.2 mm).

3.4 TILE BACKING PANEL INSTALLATION

A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use improved modified dry-set mortar (thinset) for bonding material unless otherwise directed in manufacturer's written instructions.

3.5 PROTECTION

A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

B. Prohibit foot and wheel traffic from tiled floors for not less than seven days after grouting is completed.

C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

SECTION 09 91 23 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates.

1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1. Prefinished items include, but are not limited to, the following factory-finished components:

a. Architectural woodwork.
b. Acoustical wall panels.
c. Finished mechanical and electrical equipment.
d. Light fixtures.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.

a. VOC Content: Include VOC content for each product.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

1.5 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers Names: District Standard:
1. Dunn-Edwards Corporation (Dunn-Edwards).

B. Products: Subject to compliance with requirements, avail

C. able products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles for the paint category indicated.

D. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Material Quality:

1. Provide paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
2. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Colors: As indicated on Drawings or, if not indicated, as selected by Architect from manufacturer's full range.

2.3 PRIMERS/SEALERS

A. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
1. Dunn-Edwards: VINYLASTIC Premium (VNPR00): Applied at a dry film thickness of not less than 1.2 mils (0.0305 mm).

2.4 WATER-BASED PAINTS

A. Interior Semigloss Acrylic Enamel: Factory-formulated semigloss acrylic-latex enamel for interior application. 35 to 70 units at 60 degrees, according to ASTM D 523.
1. Dunn-Edwards: SPARTASHIELD 100% acrylic Interior Semi-Gloss Paint (SWLL50): Applied at a dry film thickness of not less than 1.5 mils (0.0381 mm).

B. Color to be Dunn Edwards **Droplets DEW381**

2.5 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
   1. Gypsum Board: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Spray-Textured Substrates: Verify that surfaces are dry.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Proceed with coating application only after unsatisfactory conditions have been corrected.

   1. Application of coating indicates acceptance of surfaces and conditions.

G. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

   1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations applicable to substrates indicated.

B. Remove door and other hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

   1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

   1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Wood Substrates:

   1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
   2. Sand surfaces that will be exposed to view, and dust off.

3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint faces, all four edges, edges of cutouts, and mortises of interior doors and entire exposed surface of interior door frames.

    a. Paint all surfaces that will be covered by door hardware including, but not limited to, kick, mop, and armor protection plates.

4. Paint entire exposed surface of window frames and sashes.
5. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
6. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
7. Primers specified in painting schedules are required on items that are factory primed or factory finished.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

1. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior gypsum board primer.
b. Finish Coats: Interior semigloss acrylic enamel.

END OF SECTION 09 91 23

SECTION 10 28 00 – TOILET ROOM ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Public-use washroom accessories.
2. Underlavatory guards.

B. Related Requirements:

1. Section 06 10 00 "Rough Carpentry" for wood backing for anchoring toilet, bath, and laundry accessories.

1.3 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Include electrical characteristics.

B. Samples: When requested, provide full size, for each accessory item and for each finish specified to verify design, operation, and finish requirements.

1. Approved full-size Samples will be returned and may be used in the Work.

C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated.
2. Identify accessories using designations indicated.

1.5 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, visible silver spoilage defects.
2. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 OWNER-FURNISHED MATERIALS

A. Owner-Furnished Materials:

1. Owner may furnish some or all toilet, bath, and laundry accessories at his option for installation by the Contractor.
2. All Owner-furnished material shall comply with the CBC, the 2010 ADA Standards for Accessible Design, and the requirements of this section.
3. Installation of all Owner-Furnished material shall comply with the CBC, the 2010 ADA Standards for Accessible Design, and the requirements of this section.

2.2 ACCESSIBILITY REQUIREMENTS

A. Comply with applicable provisions in the CBC and the 2010 ADA Standards for Accessible Design.

B. Mirrors: Where mirrors are provided, at least one shall comply with CBC Section 11B-603.3 per CBC Section 11B-213.3.5.

C. Coat Hooks and Shelves: Where coat hooks or shelves are provided in toilet rooms without toilet compartments, at least one of each type shall comply with CBC Section11B-603.4. Where coat hooks or shelves are provided in toilet compartments, at least one of each type complying with CBC Section11B-604.8.3 shall be provided in toilet compartments required to comply with CBC Section 11B-213.3.1. Where coat hooks or shelves are provided in bathing facilities, at least one of each type complying with CBC Section11B-603.4 shall serve fixtures required to comply with CBC Section 11B-213.3.6.

D. Protruding Objects:

1. General: Protruding objects shall comply with CBC Section 11B-307 per CBC Section 11B-307.1.
2. Protrusion Limits: Objects with leading edges more than 27 inches (686 mm) and not more than 80 inches (2032 mm) above finish floor or ground shall protrude 4 inches (102 mm) maximum horizontally into the circulation path per CBC Section 11B-307.2 and CBC Figure 11B-307.2.

E. Reach Ranges:

1. General: Reach ranges shall comply with CBC Section 11B-308 per CBC Section 11B-308.1.

F. Operable Parts:

1. General: Operable parts shall comply with CBC Section 11B-309 per CBC Section 11B-309.1.
2. Operation: Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum per CBC Section 11B-309.4.

G. Toilet and Bathing Rooms:

1. General: Toilet and bathing rooms shall comply with CBC Section 11B-603 per CBC Section 11B-603.1.
2. Mirrors: Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1016 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (889 mm) maximum above the finish floor or ground per CBC Section 11B-603.3.
3. Coat Hooks, Shelves, and Medicine Cabinets: Coat hooks shall be located within one of the reach ranges specified in CBC Section 11B-308. Shelves shall be located 40 inches (1016 mm) minimum and 48 inches (1219 mm) maximum above the finish floor. Medicine cabinets shall be located with a useable shelf no higher than 44 inches (1118 mm) maximum above the finish floor per CBC Section 11B-603.4.
4. Accessories: Where towel or sanitary napkin dispensers, waste receptacles, or other accessories are provided in toilet facilities, at least one of each type shall be located on an accessible route. All operable parts, including coin slots, shall be 40 inches (1016 mm) maximum above the finish floor per CBC Section 11B-603.5.

H. Water Closets and Toilet Compartments:

1. General: Water closets and toilet compartments shall comply with CBC Sections 11B-604.2 through 11B-604.8 per CBC Section 11B-604.1.
2. Grab Bars for Water Closets: Grab bars for water closets shall comply with CBC Section 11B-609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall. Where separate grab bars are required on adjacent walls at a common mounting height, an L-shaped grab bar meeting the dimensional requirements of CBC Sections 11B-604.5.1 and 11B-604.5.2 shall be permitted per CBC Section 11B-604.5.

    a. Side Wall: The side wall grab bar shall be 42 inches (1067 mm) long minimum, located 12 inches (305 mm) maximum from the

rear wall and extending 54 inches (1372 mm) minimum from the rear wall with the front end positioned 24 inches (610 mm) minimum in front of the water closet per CBC Section 11B-604.5.1 and CBC Figure 11B-604.5.1.

b. Rear Wall: The rear wall grab bar shall be 36 inches (914 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side per CBC Section 11B-604.5.2 and CBC Figure 11B-604.5.2.

3. Dispensers: Toilet paper dispensers shall comply with CBC Section 11B-309.4 and shall be 7 inches (178 mm) minimum and 9 inches (229 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be below the grab bar, 19 inches (483 mm) minimum above the finish floor and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow per CBC Section 11B-604.7 and CBC Figure 11B-604.7.

I. Lavatories and Sinks:

1. General: Lavatories and sinks shall comply with CBC Section 11B-606 per CBC Section 11B-606.1.
2. Exposed Pipes and Surfaces: Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks per CBC Section 11B-606.5.
3. Soap Dish for Shower Compartments: Where a soap dish is provided, it shall be located on the control wall at 40 inches (1016 mm) maximum above the shower floor, and within the reach limits from the seat per CBC Section 11B-608.10.

J. Grab Bars:

1. General: Grab bars in toilet facilities and bathing facilities shall comply with CBC Section 11B-609 per CBC Section 11B-609.1.
2. Cross Section: Grab bars shall have a cross section complying with CBC Section 11B-609.2.1 or 11B-609.2.2 per CBC Section 11B-609.2.

a. Circular Cross Section: Grab bars with circular cross sections shall have an outside diameter of 1-1/4 inches (32 mm) minimum and 2 inches (51 mm) maximum per CBC Section 11B-609.2.1.

b. Non-Circular Cross Section: Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (102 mm) minimum and 4.8 inches (122 mm) maximum per CBC Section 11B-609.2.2 and CBC Figure 11B-609.2.2.

3. Grab Bars: Spacing: The space between the wall and the grab bar shall be 1-1/2 inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1-1/2 inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum per CBC Section 11B-609.3 and CBC Figure 11B-609.3.

a. Exceptions:

1) The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1-1/2 inches (38 mm) minimum.
2) For L-shaped or U-shaped grab bars complying with CBC Section 11B-609.9 the space between the walls and grab bar shall be 1-1/2 inches (38 mm) minimum for a distance of 6 inches on either side of the inside corner between two adjacent surfaces.

4. Position of Grab Bars: Grab bars shall be installed in a horizontal position, 33 inches (838 mm) minimum and 36 inches (914 mm) maximum above the finish floor measured to the top of the gripping surface, except that at water closets for children's use complying with CBC Section 11B-604.9, grab bars shall be installed in a horizontal position 18 inches (457 mm) minimum and 27 inches (686 mm) maximum above the finish floor measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with CBC Section 11B-607.4.1.1 or 11B-607.4.2.1 per CBC Section 11B-609.4.
5. Surface Hazards: Grab bars and any wall or other surfaces adjacent to grab bars shall be free of sharp or abrasive elements and shall have rounded edges per CBC Section 11B-609.5.
6. Fittings: Grab bars shall not rotate within their fittings per CBC Section 11B-609.6.
7. Installation: Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear floor space per CBC Section 11B-609.7.
8. Structural Strength: 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 per CBC Section 11B-609.8.
9. Alternate Configuration: L-shaped or U-shaped grab bars shall be permitted per CBC Section 11B-609.9.

K. Toilet tissue dispensers, seat cover dispensers, sanitary-napkin vendors, and sanitary-napkin disposal units located on the grab bar side of an accessible toilet room or stall shall not project more than 3 inches (76.2 mm) from the finished wall surface.

2.3 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in CEC and NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.4 SUSTAINABILITY REQUIREMENTS

A. Comply with applicable provisions in the CGBC.

B. Recycled Content of Steel Products: Recycled content not less than 20 percent.

C. Recycled Content of Stainless-Steel Products: Recycled content not less than 20 percent.

2.5 PUBLIC-USE WASHROOM ACCESSORIES

A. Source Limitations: Obtain public-use washroom accessories from single source from single manufacturer.

B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or comparable product by one of the following:

1. AJW Architectural Products.
2. American Specialties, Inc.
3. Bobrick Washroom Equipment, Inc. (Basis of Design for units below)
4. Bradley Corporation.

C. Recessed Multi-Roll Toilet Tissue Dispenser:

1. Model B-4388 (recessed) , Model B-4288 (surface)

D. Surface-Mounted (Folded) Paper Towel Dispenser:

1. Model B-2620.

E. Surface-Mounted Waste Receptacle:

1. Model B-279.

F. Grab Bar with Snap Flange - Type A:

1. Model B-5806 x 36.

G. Grab Bar with Snap Flange - Type B:

1. Model B-5806 x 42.

H. Recessed Sanitary-Napkin Disposal:

1. Model B-270.

I. Surface-Mounted Seat-Cover Dispenser:

1. Model B-4221.

J. Mirror with Stainless Steel Channel Frame, Snap Locking Design:

1. Model B-290.

2.6 UNDERLAVATORY GUARDS

A. Source Limitations: Obtain underlavatory guards from single source from single manufacturer.

B. 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. Buckaroos, Inc.
2. Plumberex Specialty Products, Inc.
3. Truebro by IPS Corporation.

C. Underlavatory Guards:

1. Description: Insulating pipe covering for supply and drain piping assemblies that prevents direct contact with and burns from piping; allow service access without removing coverings.
2. Material and Finish: Antimicrobial, molded plastic, white.

2.7 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, not less than 0.031 inch (0.8 mm) nominal thickness unless otherwise indicated.

B. Brass: ASTM B 19, flat products; ASTM B 16/B 16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.

C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), not less than 0.036 inch (0.9 mm) nominal thickness.

D. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 (Z180) hot-dip zinc coating.

E. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed.

G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.8 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide not less than six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface not more than 40 inches (1016 mm) above the finish floor.

B. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface not more than 35 inches (889 mm) above the finish floor.

C. Where towel dispensers, sanitary napkin dispensers, waste receptacles, or other accessories are provided in toilet facilities, at least one of each type shall be located on an accessible route.

1. All operable parts, including coin slots, shall be not more than 40 inches (1016 mm) above the finish floor.

D. The space between grab bars and projecting objects below and at the ends shall be not less than 1-1/2 inches (32 mm).

E. The space between grab bars and projecting objects above shall be not less than 12 inches (305 mm).

F. Grab bars shall not rotate within their fittings.

G. 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.

H. Toilet and bath accessories shall not project more than 4 inches (101.6 mm) into the path of travel.

I. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

J. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N), when tested according to ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 10 28 00

SECTION 11 40 00 –

FOODSERVICE EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Foodservice Equipment, including storage, preparation and serving equipment, as indicated on the Foodservice Equipment drawings and in ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein. The Foodservice Equipment drawings form part of these specifications.

B. Stainless steel fabrications, including countertops, cabinetry and corner guards

C. Plumbing, including faucets, drains and fittings for sinks built into Foodservice Equipment

E. Walk-In Cooler and Freezer

1.02 RELATED SECTIONS

A. Division 1 Section - Product Requirements: Conditions for acceptance of products by manufacturers and for substitutions. Unless specifically noted, no substitutions will be considered.

B. Division 1 Section - Warranty

C. Division 3 Section - Cast-In-Place Concrete: Concrete curbs, pads and depressions

D. Division 5 Section - Metal Fabrications: Metal supports and anchors to concrete and masonry

E. Division 7 Section - Joint Sealers/Sealants: Joint sealing for weather tightness, waterproofing and acoustical seals

F. Divisions 22 & 23 Section - Basic Mechanical Requirements: General requirements, in addition to those specified, as applicable to plumbing, fire protection and ventilating work associated with foodservice equipment

G. Divisions 22 & 23 Section - Supports, Anchors and Seals: General requirements for supports and anchors for pipe and duct systems for foodservice equipment

H. Division 26 Section - Basic Electrical Requirements: General requirements, in addition to those specified, as applicable to electrical work associated with foodservice equipment

1.03 REFERENCE STANDARDS

A. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers; 2016.

B. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2016.

C. ASTM A554 - Standard Specification for Welded Stainless Steel Mechanical Tubing; 2016.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2016.

E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2016.

F. ASTM A924/A924M - Standard Specification for General Requirements for Sheet Steel, Metallic-Coated by the Hot-Dip Process; 2016.

G. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2016.

H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2016.

I. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2016.

J. NFPA 54 - National Fuel Gas Code; 2016.

K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; 2016.

M. NHLA G-101 - Rules for the Measurement & Inspection of Hardwood & Cypress; 2016.

N. NSF 2 - Food Equipment; 2016.

O. NSF 51 - Plastic Materials and Components Used in Food Equipment; 2016.

P. NSF 7 - Commercial Refrigerators and Freezers; 2016.

1.04 SUBMITTALS

A. General: The Foodservice Design Consultant's design documents are not acceptable as submittal set.

1. Submit electronic version of each Drawing document. Prepare drawings at the following minimum scales:

a. Plans 1/4-inches = 1-foot-0-inches

b. Elevations 1/2-inches = 1-foot-0-inches

c. Sections 1/2-inches = 1-foot-0-inches

2. Submit electronic set of Product Data.

3. Forward complete submittal package to expedite review and avoid construction delay. Incomplete submittals will not be reviewed.

4. After return of reviewed submittal, make revisions as necessary and resubmit as required.

5. Submit certification of operational tests per PART 3.2 - FIELD QUALITY CONTROL, herein.

B. Drawings:

1. Submit dimensioned rough-in drawings of the project site showing Plumbing, HVAC and Electrical Service requirements. Drawings to indicate rough-in data for services based on specified equipment. Provide final exact locations, dimensions and characteristics of service and connections to suit requirements of Foodservice Equipment to be provided.

2. Submit dimensioned fabrication drawings for custom fabricated equipment including plans, elevations, and sections, showing materials and gauges used.

3. Wiring Diagrams: Submit details of wiring for power and control systems; differentiate between Manufacturer Installed wiring and Field Installed wiring.

C. Product Data:

1. Cover Sheet: The Cover Sheet must contain the following information to be valid and complete:

a. Item number

b. Manufacturer

c. Model number

d. Quantity

e. Performance data

f. Construction methods and materials

g. Furnished accessories

h. Installation methods and instructions, including curbs, legs, casters, etc.

i. Power and fuel requirements with BTU ratings

j. Water and drainage requirements, including required PSI

k. Service connection requirements

l. Exterior finishes

m. Coordination notes to the Contractors not within the FSEC's scope of work

2. Cut Sheets: A catalog Cut Sheet or brochure of all stock manufactured equipment (buy-outs) shall be collated with the aforementioned cover sheets.

a. Cut Sheet shall be an original or first generation copy.

b. Fax copies will not be accepted.

c. If a Cut Sheet or brochure is not obtainable for a specific buy-out item, insert a filler sheet with all required information in typewritten form.

3. Maintenance Data: Provide operation manuals and maintenance data for Foodservice Equipment for inclusion in the Operation and Maintenance Manual.

4. For District Furnished Equipment: The Contractor shall be responsible for providing the operation manuals and maintenance data. The Contractor shall coordinate with the District who will receive District Furnished Equipment.

D. Samples: Submit 8-inch squares of materials and 12-inch lengths of running members and trim for all exposed finishes, and for custom fabricated equipment.

1.05 QUALITY ASSURANCE

A. Manufacturers' Qualifications: Firms shall have been regularly engaged in the manufacture of Foodservice Equipment of the types, capacities, and sizes required, whose products have been in satisfactory use in similar service for no fewer than five (5) projects.

B. Installer's Qualifications: Installer shall have completed no fewer than five (5) Foodservice Installations similar in material, design, and extent to that indicated for this Project, which have resulted in satisfactory in-service performance.

C. Codes and Standards:

1. NSF Standards: Comply with applicable National Sanitation Foundation (NSF) standards and recommended criteria including NSF 2 and NSF 7. Provide each principal item of Foodservice Equipment with a NSF Seal of Approval.

2. UL Labels: Provide Underwriters Laboratories, Inc. (UL) labels on prime electrical components of Foodservice Equipment. Provide UL "recognized marking" on other items with electrical components, signifying listing by UL, where available.

3. ANSI Standards: Comply with applicable American National Standards Institute (ANSI) standards for electric-powered and gas-burning appliances, for piping to compressed-gas cylinders, and for plumbing fittings including vacuum breakers and air gaps to prevent siphonage in water piping.

4. NFPA Codes: Install Foodservice Equipment in accordance with the following National Fire Protection Association (NFPA) codes:

a. NFPA 54 - National Fuel Gas Code.

b. NFPA 70 - National Electrical Code current adopted edition with State amendments.

c. NFPA 96 - Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment.

5. ASME Boiler Code: Construct steam-generating and closed steam-heating equipment to comply with American Society of Mechanical Engineers (ASME BPVC-IV) Boiler and Pressure Vessel Code; Section IV for units not exceeding 15 psi or 250 degrees F, or Section I for higher pressure/temperature units.

6. Refrigeration: Use current refrigeration on all self-contained and remote refrigerated items including, but not limited to ice machines, refrigerators and freezers. The refrigerant shall be current, new (not recycled), and readily available for a minimum of ten (10) years. For further clarification refer to PART 2.6 - REFRIGERATION EQUIPMENT, herein.

7. Accessibility

a. Where provided, check-out aisles, sales counters, food service lines, queues, and waiting lines shall comply with CBC Section 11B-227 and 11B-904.

b. Foodservice aisles shall be a minimum of 36 inches wide.

c. The top of tray slides shall be 28 inches minimum and 34 inches maximum above the finish floor or ground.

d. Foodservice equipment required to be accessible shall conform to all reach requirements in CBC Figures 11B-308.2.1 - 11B-308.3.2 (CBC Section11B-308).

8. Space and elements within foodservice employee work areas shall meet the requirements of CBC Section 11B-203.9.

9. Lockers shall have latch and locking hardware that does not require tight grasping, tight pinching, or twisting of the wrist to operate. Provide shelf and pole at 48" max AFF and lower shelf at 15" min AFF (Reach requirements). Provide AT LEAST 5% of total lockers BUT NO FEWER THAN ONE OF EACH TYPE OF LOCKERS SHALL BE ACCESSIBLE per CBC Section 11B-811.

10. Guidelines for Seismic Restraint of Kitchen Equipment as published by SMACNA and approved by DSA.

11. Welding per California Fire Code Chapter 35

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver Foodservice Equipment in containers designed to protect the equipment and finish until installation. Make arrangements to receive equipment, when required, at the project site or to hold in a warehouse until delivery can be made to the job site.

B. Storage: Store Foodservice Equipment in the original containers and in a location to provide adequate protection to equipment while not interfering with other construction operations.

C. Handling: Handle Foodservice Equipment carefully to avoid damage to components, enclosures, and finish. Do not install damaged Foodservice Equipment. Replace and return damaged components to the Manufacturer.

D. District Furnished Equipment: The Contractor shall receive, accept and store the District Furnished Equipment until installation. The Contractor shall assume responsibility for the equipment and its condition upon receipt of the equipment by him or his representative.

1.07 PROJECT CONDITIONS

A. Field Measurements: Take field measurements before ordering and fabrication, to assure accurate fit of fabricated equipment.

B. Available Services: Verify electrical service characteristics and water, steam, and gas service pressures. Provide pressure-regulating valves where required for proper operation of equipment.

1.08 SUBSTITUTION

A. Substitution of Materials and Equipment: Whenever a material, article, or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade name, catalog numbers, or the like, it is so identified for the purpose of establishing a standard. Substitute items shall be submitted to District at least ten days before bid date for review and consideration. Items that are acceptable (with District's written approval) shall be so stated in an Addendum.

1.09 WARRANTIES

A. Special Project Warranty: The Contractor shall ensure that the Manufacturer of Refrigeration Compressors shall provide a written warranty signed by the Manufacturer, agreeing to replace or repair, within a five-year warranty period, Refrigeration Compressors with inadequate and/or defective materials and/or workmanship, including leakage, breakage, improper assembly, or failure to perform as required, provided Manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty period. Two-year Labor warranty shall also be provided.

B. All Other Warranties: The warranty period for all items furnished (other than the aforementioned) shall be guaranteed against defects in workmanship and material for a minimum period of two (2) years. This warranty shall include both Parts and Labor.

C. The Contractor shall be responsible for returning all warranty cards to the Manufacturers as required. Should he fail to return the warranty cards, the Contractor shall be responsible for providing the same warranty to the District as required by the Manufacturer.

D. Refer to Division 1 Section - Warranty for warranty format.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Stock Manufactured Items: Refer to ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein.

B. Stainless Steel: Provide ASTM A666 / AISI Type 304 non-magnetic sheets, free of buckles, waves, and surface imperfections; Blend and regrain as required to effect matching and continuous finished product..

1. Finish for exposed surfaces to be No. 4 polished, unless specified otherwise.

2. Protective covering shall be provided on all polished surfaces of stainless steel sheet work, and retained and maintained until time of final testing, cleaning, start-up, and Substantial Completion.

C. Galvanized Sheet Steel: Use only if specified; comply with ASTM specifications for 'zinc-coated' (galvanized) iron or steel sheets, coils and cut lengths; it shall be mild, low carbon steel, zinc coated; ASTM A653/A653M, except for extensive forming; ASTM A924/A924M, G90 zinc coating, chemical treatment. A-98 coating shall be 1.25 oz per square foot coating class, also known as 'commercial'.

D. Sheet Steel: Provide ASTM A1011/A1011M hot-rolled carbon steel.

E. Stainless Steel Tube: Provide ASTM A554, Type 304 with No. 4 polished finish. All tubing shall be round unless specified otherwise.

F. Aluminum: Provide ASTM B209 sheet and plate, ASTM B221 extrusions, 0.40-mil clear anodized finish where exposed, unless specified otherwise.

G. White Metal: Provide corrosion-resistant metal containing not less than 21 percent nickel. Make castings free from pit marks, runs, checks, burrs, and other imperfections; rough grind, polish, and buff to bright luster.

1. In lieu of white metal castings, Type 302 18-8 stainless steel die-cast or stamped may be used.

H. Plastic Materials and Components: Except for Plastic Laminate, provide plastic materials and components that comply with NSF 51.

I. Hardwood Work Surfaces: Provide laminated edge-grained hard maple (Acer Saccharum), NHLA G-101 First Grade with knots, holes, and other blemishes culled out, kiln dried at 8 percent or less moisture, waterproof glued, machined, sanded, and finished with NSF-approved oil sealer. Provide minimum 2-1/4-inch thickness unless specified otherwise.

J. Sound Deadening: Provide coating of sound deadening material at underside of all stainless steel tops, drainboards, dishtables, and sinks. Sound deadening material to consist of NSF component smooth flowing Latex Sound Deadener, which is non-aging, does not become brittle and may be painted when dry.

K. Sealants: Provide ASTM C920, Type S, Grade NS, Class 25, Use NT. When fully cured and washed, sealant shall meet the requirements of the Food and Drug Administration Regulation 21 CFR 177.2600 for use in areas where sealant comes in contact with food.

1. The District will select the color from the manufacturer's standard colors.

2. Backer Rod shall be closed-cell polyethylene rod stock, larger than joint width.

L. Gaskets: Provide solid or hollow (not cellular) neoprene or PVC light gray gaskets, minimum 40 Shore A hardness, self-adhesive or prepared for either adhesive application or mechanical anchorage.

2.02 WELDING

A. Welding must comply with California Fire Code Chapter 35.

B. All welding shall utilize the heliarc method with welding rod of the same composition as the sheets or parts to be joined.

C. Welds shall be complete, strong and ductile with all excess metal ground and joints finished smooth to match adjoining surfaces.

D. Welds shall be free of mechanical imperfections such as gas holes, pits, cracks, etc., and shall be continuously welded so that the fixtures shall appear as one-piece construction.

E. Butt welds made by spot solder and finished by grinding shall not be acceptable.

F. Spot welds shall have a maximum space of at least 1/4-inch length of the welding material at a maximum space of 4-inches from center to center. Weld spacing at the ends of the channel battens shall not exceed 2-inch centers.

G. In no case shall soldering be considered as a replacement for welding, nor shall any soldering operation be done where dependence is placed on stability and strength of the joint.

H. Welds made of spot welding straps under seams and filling in with solder will not be acceptable.

I. Fixtures shall be shop fabricated of one piece and shipped to the job completely assembled whenever possible. Equipment too large to transport or enter the building as one piece shall be constructed so that the field joints can be welded at the job site.

J. All body joints made in the field shall be closely butted together, pulled together in the field and tightly belted on the inside or a concealed location.

K. All exposed joints shall be ground flush with adjoining material and finished to harmonize therewith.

L. Whenever material has been sunk or depressed by welding operation, such depression shall be suitably hammered and peened flush with the adjoining surface and, if necessary, again ground to eliminate low spots. In all cases, the grain of rough grinding shall be removed by successive fine polishing operations.

M. All unexposed welded joints on undershelves of tables or counters in stainless steel construction shall be suitably coated at the factory with an approved metallic based paint.

N. After galvanized steel members have been welded, all welds and areas where galvanizing has been damaged shall have a zinc dust coating applied.

O. Butt joints and contact joints, wherever they occur, shall be close fitting and shall not require a filler. Wherever sheared edges occur, they shall be free of burrs, fins, and irregular projections, and shall be

finished to obviate all danger of cutting or laceration when the hand is drawn over them. In no case shall overlapping materials be acceptable where miters or bull nosed corners occur.

P. The grain of polishing shall run in the same direction on all horizontal and on all vertical surfaces of each item of fabricated equipment except in the case where the finish of the horizontal sections of each shall terminate in a mitered edge. Where sinks and adjacent drainboards are equipped with a splash, the grain of polishing shall be consistent in the direction throughout the length of the splash and sink compartment.

Q. Bolts, screws, nuts and washers shall be of steel, except where brass or stainless steel is fastened, in which case they shall be of brass or stainless steel, respectively. Screws shall be 2-inch long, pan head Philips No. 12. Where dissimilar metals are fastened, nuts, bolts, screws and washers shall be of similar grade metal. The spacing and extent of bolts and screws shall be such as to ensure suitable fastening and prevent buckling of the metals fastened.

2.03 ELECTRICAL

A. Electrical Requirements: Confirm available Electrical Services, such as actual voltages available, number of phases, and number of wires, at the project site, before submitting product data and placing orders.

1. Should requirements indicated on Drawings and in ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein, be of larger sizes or higher standards than are required by manufacturer or by governing authorities having jurisdiction, requirements indicated on Drawings and in ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein, shall govern.

2. Should requirements indicated on Drawings and in ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein, be of smaller sizes or lower standards than are required by manufacturer or by governing authorities having jurisdiction, requirements of manufacturer or of governing authorities having jurisdiction shall govern.

3. All costs for compliance with requirements of manufacturer and of governing authorities having jurisdiction shall be included in the Contract Sum. Rulings and interpretations of code enforcing agencies shall be included in such requirements.

B. Circuits and Rough-Ins:

1. Permanent connections to the project site's Electrical Service shall be made in accordance with requirements as specified in DIVISION 26 - ELECTRICAL, and shall comply with California Electrical Code (CEC).

2. Make connections only at a junction box, by conductors in metallic conduit. Minimum size of junction boxes (unless specified otherwise) shall be 4-11/16-inches square and 1-1/2-inches deep, with 1/2-inch and 3/4-inch knockouts.

3. Utility chase areas accommodating junction and pull boxes shall be a minimum of 18-inches square.

4. Coordinate exact locations, types, and quantities of conductors and sealing of fittings with Electrical Drawings and with ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein.

5. In cases where equipment is directly connected, provide a length of flexible steel, neoprene-jacketed, Seal-Tite conduit, Anaconda Type UA, or equal, complete with approved liquid-tight contactors on each end, designed to provide electrical grounding continuity; make input connection as short as possible, not to exceed 36-inches.

6. Provide proper and complete grounding of all metallic Foodservice Equipment.

C. Wiring:

1. Exposed wet area applications shall be rigid galvanized steel conduit except for flexible connections. Thin wall conduit (EMT) shall not be used for wet area application. Exposed outlet boxes shall be Stainless steel with threaded hubs.

2. Exposed flexible connections shall be flexible steel, neoprene-jacketed, Seal-Tite conduit, Anaconda Type UA, or equal, complete with approved liquid-tight contactors on each end, designed to provide electrical grounding continuity.

3. Wiring for built-in strip heaters and immersion type elements shall have UL-listed insulation, not less than 300 volt rated, with listed nickel wire. Extend wiring in raceways or conduits to the junction or pull boxes with not less than 600-volt rated insulated wire.

4. Refrigerator and freezer cabinets: Provide conduit as necessary to connect internal components to the junction or pull boxes, and as follows.

   a. Internal wiring shall be UL-listed, rubber-covered 600-volt rated conductor, except for door heaters which shall be chrome wire with silicone braided jacket having resistance of 10.4 watts per lineal foot.

   b. For freezer applications, provide wiring in rigid or flexible Seal-Tite Flex or equal (no known equal) EMT.

5. Outlets, including all convenience outlets, lighting receptacles (rubber or porcelain), and door switches shall be mounted within approved boxes. Convenience outlets for evaporators shall be twist-lock type. Solid connections for freezer evaporators shall be vapor tight.

6. Door switches for hinged doors shall be Arrowhart No. 4039 or equal (no known equal); for sliding doors, provide UL-listed toggle switches.

7. Heating element controls for custom fabricated equipment, such as custom fabricated plate warmers shall be provided as follows.

   a. Uninsulated cabinets with or without doors: provide 3-level switch.

   b. Open front cabinets with or without insulation: provide variable controller.

   c. Insulated cabinets with doors: provide thermostat.

D. Starters, Switches and Controls: Provide starters, motor controls, switches, remote controls, and transformers as necessary.

1. All switches shall be located out of the heat zone. If ambient temperature will be above 100 degrees Fahrenheit, provide for adequate ventilation.

2. Each motor driven appliance or electrical heating unit shall have a heavy-duty control switch, magnetic contactor or starter. Provide electrical controls, switches or other components being furnished loose by the manufacturer.

3. Provide starters for across-the-line start, with thermal overload protection and manual overload reset. Push button stations shall be mounted in starter covers, except where necessary for starters to be mounted in a remote location.

E. Convenience and Power Outlets: Provide all cut-outs, outlet boxes, cover plates, and all service fittings as necessary in Custom Fabricated Foodservice Equipment as shown on document drawings and in

ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein; provide necessary conduits to extend to the junction box or pull box of the project site's Electrical System.

1. Outlets having a specific voltage for a single purpose application shall be of such design that plugs designed for other applications will not fit.

2. Verify that outlets will match appliance plugs as indicated on Electrical Drawings and in ARTICLE 3.06 - EQUIPMENT SCHEDULE, herein. Replace cords and plugs if necessary.

3. Electrical outlet devices shall be National Electrical Manufacturers Association (NEMA) Specification Grade and manufactured by Hubbell, Square D, Bryant, General Electric, Pass and Seymour, Arrowhart or equal.

F. Cords and Plugs: Provide UL-listed cords and plugs for stock manufactured and for custom fabricated equipment.

1. Cords are to be rubber-covered, three-wire cord of appropriate current capacity and appropriate length to suit use.

2. Plugs are to be three-prong, ground type of appropriate NEMA configuration for electrical characteristics of equipment and serving outlet.

G. Light Fixtures: Where light fixtures are specified as integral with Foodservice Equipment, provide sockets, lamps and ballasts as appropriate. For fluorescent fixtures, provide DeLuxe Warm White lamps, unless specified otherwise.

H. Internal Wiring of Custom Fabricated Fixtures or Equipment:

1. Obtain and pay for all Permits and Fees for inspection and approval of Electrical Work built into custom fabricated fixtures or equipment, for which a permit is required. Proof of inspection shall be attached to, and visible on, fixture.

2. All internal wiring built into, or forming an integral part of, a unit of custom fabricated fixtures or equipment shall be completely wired to a junction box built into the unit, ready for final connection to the project site's Electrical System as specified herein.

3. Licensed Electricians shall perform all internal wiring of fixtures and equipment.

I. The Electrical Contractor shall be responsible for all inter-connections between systems and the foodservice equipment. Refer to PART 3.1.H - FINAL CONNECTIONS, herein.

2.04 PLUMBING

A. All dishwashers, hose reels, janitor sinks, garbage disposals, pre-rinse sprays and water supply units are to be fitted with mixing valve and pressure-reducing valve (per manufacturer requirements), to be supplied by the FSEC and installed by the Plumbing Contractor.

B. All counter-top equipment requiring water connections must be provided with pressure-reducing valve per 2016 California Plumbing Code (CPC).

C. Provide charcoal water filter for all ice and water stations, ice machines, tea and coffee machines.

D. The Plumbing Contractor shall be responsible for all inter-connections between systems and the foodservice equipment. Refer to PART 3.1.H - FINAL CONNECTIONS, herein.

E. The Plumbing Contractor shall install electrical shut-off gas valve(s), provided by the FSEC, in an accessible location above the ceiling.

2.05 HEATING EQUIPMENT

A. Gas-Heated Appliances: All Gas-Operated and -Heated Equipment shall conform to applicable American Gas Association (AGA) standards and to all applicable Local and State Health Department regulations.

B. Steam-Heated Appliances: All Steam-Heated Equipment shall be a self-contained assembly complete with control valves located in a readily accessible position.

C. Heating Equipment Controls: Wherever Thermostatic Controls for Gas-, Electric-, or Steam-Heating Equipment are indicated or necessary, provide controls complete and of materials, size, or rating as required.

D. Cleaning Provisions: Heating Equipment shall be readily removable for cleaning.

2.06 REFRIGERATION EQUIPMENT

A. Refrigeration Equipment, General: Provide refrigeration condensing units of size and capacities as indicated, consisting of compressors, condensers, receivers, motors, mounting bases, vibration isolators, refrigeration components, safety devices, electrical controls, refrigerant, and protective controls. Units are to be charged with refrigerant, all factory assembled and tested.

1. Refrigerant: Utilize refrigerant with an ozone depleting potential of 0. All refrigerants to meet all current codes. The following refrigerants are listed as minimums:

2. R-448 Low to medium temperature

3. R-448 Medium temperature

4. R-448 High temperature

5. R-448 Food grade

6. Connections: Provide quick-connect-type piping connections to receive piping from evaporator coils.

7. Outdoor Mounting: Provide weather-tight housing and low ambient controls for units mounted outdoors.

B. B. Refrigerant Piping: Type ACR copper tubing, hard temper, with wrought fittings and silver solder joints. Insulate suction lines with 1/2-inch pre-molded foamed plastic insulation. Use a closed cell Armaflex with a 3/4" wall. Ensure the Heat Trace is installed prior to the insulation installation.

C. Electrical Wiring: Provide required wiring between electrical rough-in and refrigeration units for proper operation.

D. Plumbing Piping: Provide required water and drain piping between plumbing rough-in and refrigeration units for proper operation.

E. Refrigeration Specialties: Provide as indicated refrigerant dryer, liquid line solenoid valve, suction line filter, expansion valve, and water regulating valve (for water-cooled condensers only).

1. Provide pump down control circuit consisting of thermostat and solenoid valve.

2. Maintain box temperature from thermostat and liquid line solenoid valve; control compressor from suction pressure.

2.07 EXHAUST HOODS

A. Fabricated Exhaust Hoods: Fabricate to specified UL-listed manufacturers specifications. All hoods must comply with California Mechanical Code.

B. Grease Removal: Provide removable grease baffles, with drip-channel gutters, drains, and collection basins unless specified otherwise.

C. Light Fixtures: Provide LED light fixtures, with vapor-tight sealed lens, and stainless steel conduit where exposed for wiring.

D. Exhaust Duct: Stainless steel with finish to match hood finish where exposed and galvanized steel where concealed. Provide one-hour rated shaft or equal for Type 1 hoods.

E. Stainless Steel Wall Flashing: Provide floor-to-ceiling, full width wall flashing under all exhaust hoods where a non-combustible wall surface is required.

1. Where walls enclose hoods, those walls shall be fully wrapped with stainless steel wall flashing.

2. Wall flashing shall be a minimum Type 304, 18-gauge stainless steel.

3. Sheets shall be set vertically with seams running perpendicular to the ceiling and floor.

4. Joints shall be butt joints.

5. Seams and ends shall be capped with appropriate stainless steel T-Molding or End Molding.

6. Wall flashing shall extend a minimum of 3-inches above hood line and to below top of base molding.

7. The FSEC shall provide appropriate holes (by hydraulic knockout) and utility cutouts no greater than 1/4-inch of stub-out size.

8. Where electrical outlets require a square or rectangle cutout, the opening must be fully covered by the faceplate.

9. Attach to walls with approved mastic.

F. Trim: Provide and install stainless steel trim to ceiling and adjacent walls, fabricated of the same gauge and finish as the Exhaust Hood.

G. The FSEC shall provide and install any additional support membrane to provide a complete installation of the exhaust hood. He shall also be responsible to weld collars to exhaust ducts.

H. If make-up air duct is integral to exhaust hood, FSEC shall be responsible for final connection from ductwork to make-up air collar.

2.08 MANUFACTURED PRODUCTS

A. Manufactured Products, General: Provide Manufacturer's standard materials and equipment as specified, complete with all necessary and recommended fittings, fixtures, and accessories.

Manufactured items shall comply with applicable Seismic requirements.

1. Manufactured items shall conform to applicable NSF standards and to all applicable Local and State Health Department regulations.

2. Comply with all applicable rules and regulations pertaining to adequate protection from and guarding of moving parts of otherwise hazardous equipment.

3. Electric-Operated and Electric-Heated Equipment shall conform to NEMA standards and be UL-listed and UL-labeled.

4. Standard Steam-Heated Equipment shall be manufactured in accordance with ASME code requirements and bear the ASME label.

5. Gas-Burning Equipment shall be manufactured in compliance with applicable AGA standards and bear the AGA label. Burners for gas-heated equipment shall be equipped with automatic lighters. Oven burners and other concealed burners shall have automatic safety pilots.

6. Provide Pressure Regulators for all Gas-Operated and Gas-Heated Equipment as recommended by the manufacturer and to suit service pressures.

B. Refrigerator Hardware: Heavy-duty die-cast zinc, chrome-plated and polished.

1. Hinges shall be edge mounted, self-closing type.

2. Latches shall be edge mounted, arranged for locking devices.

C. Handles and Pulls: Provide stainless steel Handles with No. 4 finish, or die-cast zinc with polished chrome-plated finish. Provide die-stamped stainless steel Pulls, recessed rectangular type, with beveled edge frame.

D. Door Slides: Provide stainless steel Door Slides with minimum load capacity of 100 lbs. per pair, and with positive doorstop. Provide stainless steel ball-bearing rollers.

E. Hinges: Provide stainless steel Hinges, continuous type or butt type as indicated.

F. Sliding Door Hardware: Provide extruded aluminum Door Track. Provide galvanized steel Door Sheave with nylon surface and ball-bearing inner races. Provide stainless steel Bottom Guide Pins, spring loaded.

G. Adjustable Shelf Supports: Provide stainless steel Shelf Supports, snap-in type, and stainless steel Brackets with countersunk mounting holes.

H. Catches: For hinged doors, provide permanent magnetic Catch of sufficient strength to hold door shut.

I. Locks: Provide Manufacturer's standard brass 5-pin cabinet-type lock; provide two keys for each lock, keyed separately.

J. Lever Drains: Provide 2-inch, heavy cast-bronze body, removable flat stainless steel strainer, twist handle waste outlet with support bracket and one-piece connected chrome-plated brass overflow.

K. Casters: Provide minimum 5-inch diameter wheel casters, with 1-1/8-inch tread width, complying with NSF standards. Provide sealed, self-lubricating bearings bright zinc-plated steel disc wheels, and solid neoprene or polyurethane non-marking tires. Provide foot brakes on two (2) casters of four (4) required per unit unless specified otherwise.

2.09 CUSTOM FABRICATED EQUIPMENT AND FIXTURES

Custom fabricated items shall comply with applicable Seismic requirements.

A. General:

1. Fasteners: No exposed screw or bolt heads will be acceptable. Rivets, if specified, shall be countersunk and ground flush, and of the same material as the pieces joined together. Butt joints made by riveting straps under seams and then filling with solder will not be accepted.

2. Rolled Edges: Rolled Edges shall be approximately 1-1/2-inch diameter, with corners bull nosed, ground and polished.

3. Bends: All horizontal and vertical corners shall be coved with radius bends of 1/2-inches or larger.

4. Corners: All corners shall be mitered and fully welded, ground, and polished. Butt joints at corners will not be accepted unless specified otherwise.

5. Closures: Provide formed stainless steel to close and finish all fixtures, backsplashes, or shelves, or entire rear of unit, or the ends flush to walls or adjoining fixtures. Closures shall be no greater than 1/8-inch gap between splash and wall.

B. Framing:

1. Mount tops on 1-1/2-inch by 1-1/2-inch by 1/8-inch galvanized angle iron, or 4-inch wide by 12-gauge galvanized channels.

2. Mount dishtables and drainboards on 4-inch wide by 14-gauge stainless steel channels.

3. Run framework around entire perimeter of unit, and cross brace on 30-inch centers.

4. For dishtables and drainboards, run framing from front to back at each leg location, and run additional channel lengthwise, located at center of table width and welded to leg channels.

5. Fasten framing to underside of top surfaces with 1/4-inch studs welded at approximately 12-inch centers.

6. Provide each stud with suitable chrome-plated lock washers and cap nuts, and make stud lengths such that cap nuts can be made up tight bringing top down snugly to framing.

C. Legs and Cross Rails:

1. Construct legs of 1-5/8-inch Outer Diameter, 16-gauge stainless steel tubing.

2. Provide fully enclosed stainless steel bullet shaped adjustable feet of Type 302 or Type 304 stainless steel exterior, not less than 1-1/2-inches in diameter, threaded for adjustment of 1-inch up or down without any threads showing.

3. Fasten leg to 4-inch high stainless steel enclosed gusset, with top completely sealed by means of stainless steel plate.

4. Fasten legs to sinks by means of stainless steel enclosed gussets welded in place, sanitary type, stainless steel, reinforced with bushings and having set screws for securing legs.

5. Fasten legs to metal tops and dishtables with stainless steel enclosed gussets, as above, welded to stainless steel channels 14-gauge or heavier.

6. Fasten legs to wood top tables by means of welding to stainless steel channels anchored to top with screws.

7. Weld gussets continuously to bottom of unit framing.

8. All equipment longer than seven (7) feet shall be provided with a minimum of six (6) legs.

D. Metal Tops:

1. Fabricate of 14-gauge stainless steel, one-piece welded construction, with exposed edges rolled and with corners bull nosed.

2. Reinforce on underside with galvanized steel channels welded in place so tops can support heavy weights without deflection. Provide cross braces at not more than 30-inches on center.

3. Where tops are adjacent to walls or adjoining equipment, provide integral splashes with all corners, both vertical and horizontal, coved a minimum of 1/2-inch radius.

4. Splashes shall be a minimum of 6-inches high including a 1-inch horizontal return to wall and 1-inch vertical drop (for 'Z' clip installation) and enclosed ends.

5. Field joints in tops are to be sanitary, tight and without open seams, by means of welding or by properly designed draw fastenings, or commercial joint material to suit the purpose required; 1/8-inch tolerance for silicone maximum.

6. For countertop equipment, provide hydraulic knock out and grommet for utility lines at counter top or sides or rear.

E. Cabinet Bodies:

1. Fabricate of 18-gauge stainless steel, with end panels formed with round corners for free-standing units, and square corners for fixtures that adjoin walls or other fixtures.

2. Provide 90-degree retentions on end panels at front and rear, turned in toward body of cabinet and welded for reinforcement.

3. For cabinets with open shelving, provide double-wall inner panels.

4. Weld ends to horizontal angle or channel members to form integral cabinet base.

5. Provide backs of same material as ends, with vertical edges turned in to match edges of ends.

6. Weld, making flush joints.

7. Provide all cabinets with full-height corner bumpers, wrapped around corner 2" each side, and crimped to cabinet face.

F. Dishtables and Drainboards:

1. Fabricate of 14-gauge stainless steel, with exposed edges formed into 1-1/2-inch by 190-degree rolled rim approximately 3-inches high.

2. Provide built-in pitch to tubs of 1/2-inch minimum.

3. Provide minimum 10-inch high backsplashes including 2-inch return on 45-degree angle, 1-inch horizontal return to wall and 1-inch vertical drop with offset (for 'Z' clip installation) and enclosed ends, or 1-1/2-inch diameter rolled rim, as indicated.

4. Construct the front rim and backsplash of the drainboard on a continuous level plane with the sink it adjoins.

5. Support drainboards 36-inches and longer with 1-5/8 inch outer diameter legs and gusset.

6. Cove all corners, both vertical and horizontal, a minimum of 3/4-inch radius.

G. Sinks:

1. Fabricate from 14-gauge stainless steel, with interior corners rounded to a 1-inch radius, both horizontally and vertically, forming cove in bottom.

2. Construct sink with butt-edge joints welded, ground smooth and polished so joints are imperceptible.

3. Finish sinks to match stainless steel top. Where sink bowls are exposed below countertop, finish sink exterior to match top.

4. Divide multiple compartment sinks with double-wall, 16-gauge stainless steel partitions rounded to 1/2-inch radius on top and having corners rounded the same as other corners in sinks. Provide multiple compartment sinks with continuous face at exposed front.

5. Provide back, bottom, and front of one continuous piece with no overlapping joints or open spaces between compartments.

6. Pitch bottom of each compartment, and crease to die-stamped recess to receive lever-type drain, without use of solder, rivets, or welding.

7. Finish front and exposed ends of sink countertop with 1-1/2-inch, 190-degree rolled edge.

8. Finish back and ends adjacent to walls or other fixtures with backsplash.

9. Punch backsplash to receive wall-mounted faucets.

10. For sinks in worktops, construct as above but omit roll edges and backsplashes. Fabricate bowl to be flush with work surface.

11. Provide stainless steel wall flashing from finished floor to ceiling behind all sinks where FRP or ceramic tile is not indicated.

12. Sink covers to be constructed of 14ga S/S construction with grommet finger hole. Covers will be fabricated to accommodate any overflow drain in sink and will fit flush over sink.

H. Drains, Wastes and Faucets:

1. Provide 2-inch, heavy cast bronze body, with removable flat stainless steel strainer, twist handle waste outlet with support bracket and one-piece connected chrome-plated brass overflow.

2. Provide 3-1/2-inch crumb cup waste outlets in all die-drawn inset type sinks.

3. Faucets: As specified.

4. Dipperwells: As specified.

I. Undershelves:

1. Construct of 16-gauge stainless steel.

2. Open Base Shelving: Edges shall be rolled down on open sides, with a 2-inch turn-up on rear and ends where adjacent to walls and other equipment.

a. Neatly notch corners and weld to legs.

b. Reinforce shelving longitudinally with 14-gauge formed channel welded to underside.

c. In fixtures with open bases, provide shelves notched a full 90 degrees and welded tightly to legs, with tight joints at all intersections of shelf and leg.

3. Bottom Shelves: Extend forward and turn down at front so as to be flush with front facing of cabinet.

4. Fixed Intermediate Shelves: Weld to front stiles and to 16-gauge stainless steel brackets so that shelf is 1-inch away from back and ends of cabinet.

5. Adjustable Shelves: Channel on all four (4) sides, weld corners, and mount on removable stainless steel standards.

6. Construct removable shelves as above, fit over cross rails and do not exceed shelving sections of 30-inches long; where one section abuts another, turn down edges 1-inch.

7. Enclosed Base Shelving: Turn up at back and sides and feather slightly to insure a tight fit to enclosure panels.

J. Overshelves:

1. Construct of 16-gauge stainless steel.

2. Set shelves mounted over equipment not adjacent to walls on 1-5/8-inch by 16-gauge stainless steel tubular standards fitted with stainless steel base flanges.

3. Completely weld top of tubular standards to 16-gauge stainless support channels; run channels full width of overshelf.

4. Where overshelves are mounted above tables, run 1/2-inch steel tension rods through counter-tops, stanchions, and reinforcing angle framing, and secure with nuts and lock washers to assure stable sway-free structure.

5. Where shelves are mounted over drainboards or dishtables, mount on upturned rolled edges omitting flanges, and scribe lower end of tube to match contour of roll. Secure as in table-mounted method.

K. Cabinet Doors:

1. General:

a. Fabricate with double-pan construction of stainless steel with edges formed into a channel extending around all sides, forming doors 3/4-inch thick.

b. Fabricate outer pans of 18-gauge stainless steel with corners welded, ground smooth, and polished.

c. Include wood fiber sound deadening material within door assembly.

d. Fabricate inner pans of minimum 20-gauge stainless steel, fitted tightly into outer 18-gauge pan.

e. Fully weld pans together.

f. Where single pan-type doors are indicated, fabricate of 16-gauge stainless steel, reinforced and stiffened with closed hat sections to prevent flexing.

2. Sliding Doors:

a. Mount doors on large ball bearing, quiet rollers in 14-gauge stainless overhead tracks. Provide resilient stops.

b. Construct sliding doors to be removable without use of tools, for cleaning purposes.

c. Provide U-shaped or Loop stainless steel handle on each door.

d. Where specified, provide doors with locks.

e. Exterior doors shall be provided with weatherproof cover.

f. All sliding doors to be provide with pushbutton activator.

3. Hinged Doors:

a. Mount hinged doors on stainless steel, continuous-type hinges.

b. Construct hinged doors so that face is flush with cabinet body.

c. Provide each door with U-shaped or Loop stainless steel surface door pull and magnetic catches.

d. Where indicated, provide doors with locks.

e. Provide permanent magnetic catch of sufficient strength (5 lb max opening force) to hold door shut.

L. Drawers:

1. Construct front of double-pan stainless steel, 16-gauge exterior and minimum 20-gauge interior.

2. Size: Minimum 5-inches deep, 1-inch thick, with other dimensions as specified and to suit installation.

3. Provide cylinder lock for drawers, unless specified otherwise.

4. Fasten drawer suspension guides to 18-gauge stainless steel housing suspended from angle framing under fixed top.

5. Mount drawers on fabricated 16-gauge stainless steel interlocking channel supports with large size, quiet ball-bearing wheel suspension and stops to prevent drawers from being pulled out of fixture.

6. Construct support slides so that drawers may be pulled out minimum of two-thirds of drawer length and support heavy loads without deflection. Drawers shall be easily removable without the use of tools.

7. Support slide to have minimum load capacity of 150 lbs per pair.

8. Provide recessed full-length stainless steel handle for each drawer.

9. For removable pan-type drawers, fabricate as a rigid self-supporting unit. Drawer body shall have flanged top for support in drawer frame and shall be as specified above. Provide replaceable, full neoprene bumpers.

10. For drawers in refrigerated sections, provide removable-type, perforated body, mounted on large ball-bearing wheels in flat tracks. Wheels shall be similar to heavy-duty urethane roller skate wheels. Wheels and bearings shall be corrosion-resistant, longwearing material, grease packed before assembly. For drawers in refrigerated sections, provide full-perimeter, soft gaskets.

11. Liner to be lift-out type, one-piece construction, and die stamped of 20-gauge stainless steel, with inside radiused corners.

12. Drawer pans shall be removable without removing frame from fixture.

M. Wall Shelves:

1. Construct of 16-gauge stainless steel with 1-1/2-inch roll on front and exposed ends, and with 2-inch turn-up on back and ends where adjacent to walls or other fixtures.

2. Miter and weld all corners.

3. Construct wall brackets of 14-gauge stainless steel with 1-1/2-inch flange at wall and completely welded to underside of shelf.

4. Fasten each bracket to wall with a minimum of two stainless steel pan head screws, Philips No. 12, 2-inch long.

5. Install so that shelf sets 1-inch away from wall.

6. Adjustable shelf supports shall be snap-in type with stainless steel brackets with countersunk mounting holes.

7. Wall backing is required.

N. Wall Backing: Where indicated on Foodservice Consultant's drawings, provide wall backing to run six inches beyond full length of equipment item at each side.

1. For Wood Frame Construction: The General Contractor shall provide and install wood blocking. Secure wall blocking in between studs.

2. For Metal Frame Construction: The FSEC shall provide and the General Contractor shall install metal backing. Metal backing shall be at least 14-ga galvanized steel. Secure wall backing to studs.

O. Cold Pans:

1. Fabricate from 16-gauge stainless steel lining and 20-gauge stainless steel casing.

2. Cove interior vertical and horizontal corners.

3. Insulate sides, ends, and bottom with material thermally equal to 2-inch thickness of fiberglass.

4. Sweat 1/2-inch-diameter copper cooling coils to underside cold pan, and seal in thermomastic material.

5. Turn down countertop (and/or flange) 1-inch into pan; install completely concealed 1-inch-wide plastic breaker strip; install 1-inch chrome-plated drain with plug.

6. Provide 1/2-inch high false bottom of 16-gauge perforated stainless steel in removable sections.

7. All cold pans, ice pans, refrigerated pans and cabinets shall be provided with breaker strips where adjoining top of cabinet face materials to prevent transfer of cold.

8. Where cold pans and other inserts are to be installed in cabinet bases, provide apron the full depth of insert and of same material as cabinet body with reinforced openings as required; form in openings on all sides.

P. Insert Pans:

1. Include standard pans and adaptive dividers on all custom-fabricated insert pans (refrigerated, ambient and hot) to provide optimal use of the insert pans. Standard pan size to be determined prior to submittal of shop drawings.

Q. Casters:

1. Heavy-duty, NSF-approved, sealed wheel and swivel ball bearings, solid or disc wheel, with greaseproof neoprene or polyurethane tire, and bright chrome plated finish on steel.

2. Wheel diameter: 5-inch, minimum.

3. Tread width: 1-3/16 inch, minimum.

4. Capacity per caster: 250 pounds, minimum.

5. Include stainless steel rotating wheel guard.

6. A minimum of two (2) casters shall have brakes.

R. Corner Guards: All exposed corners shall be provided with 14-gauge S/S corner guard, full height to ceiling. Guards to be full height corner bumpers, wrapped around corner 2 inches each side, and crimped to the face of the wall or fixture.

S. Curbs: Construct of 16-gauge galvanized steel, fully welded and reinforced where necessary.

T. Sneeze Guards:

1. Frame to be constructed of 1-1/2" Outer Diameter, stainless steel tubing; stainless steel fittings to be welded, ground smooth and polished; no exposed screw heads, bolt heads, or solder joints permitted.

2. Front and end panels to consist of 1/4" tempered glass trimmed by glazing into a 3/8" by 3/8" U-shaped stainless steel channel; panels to be removable from frame without tools.

3. Shelves to consist of 3/8" tempered glass trimmed by a snug-fitting gasket seated firmly against round tubing frame.

U. Wall Flashings: Provide wall flashings where indicated on Foodservice Consultant's drawings.

1. Wall flashing shall be a minimum Type 304, 18-gauge stainless steel.

2. Sheets shall be set vertically with seams running perpendicular to the ceiling and floor.

3. Joints shall be butt joints.

4. Seams and ends shall be capped with appropriate stainless steel T-Molding or End Molding.

5. Wall flashing shall extend a minimum of 12-inches below splash.

6. The FSEC shall provide appropriate holes (by hydraulic knockout) and utility cutouts no greater than 1/4-inch of stub-out size.

7. Where electrical outlets require a square or rectangle cutout, the opening must be fully covered by the faceplate.

8. Attach to walls with approved mastic.

9. Provide and install stainless steel trim to ceiling and adjacent walls, fabricated of the same gauge and finish.

10. Where it is necessary to remove all or part of an existing wall flashing to allow modification work, replace with stainless steel wall flashing with appropriate molding.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation, General: Set each item of non-mobile and non-portable equipment securely in place, level, and adjust to correct height.

All items shall comply with applicable Seismic requirements.

1. Anchor products to supporting substrate where indicated and where required for sustained operation and use without shifting or dislocation.

2. Conceal anchorages where possible.

3. Adjust countertops and other work surfaces to level tolerance of 1/16-inch maximum offset, and maximum variation from level or indicated slope of 1/16-inch per ft.

4. Where indicated or required for safety of equipment operator, anchor equipment to floor or wall. Provide legs with adjustable flanged foot where equipment is indicated to be anchored to floor. Install two (2) anchors on each foot and cap off with stainless steel acorn nuts.

B. Field Joints: Complete field-assembly joints (joints that cannot be completed in shop) by welding, bolting-and-gasketing, or similar methods as indicated.

1. Grind welds smooth and restore finish.

2. Set or trim gaskets flush, except for T-gaskets as indicated.

C. Enclosed Spaces: Treat spaces that are inaccessible after equipment installation by covering horizontal surfaces with powdered borax at rate of four (4) ounces per square foot.

D. Closure Plates and Strips: Install where required, with joints coordinated with units of equipment.

E. Knock outs: Provide hydraulic knock outs in foodservice equipment, where required, to run plumbing, electric, gas, or steam lines through equipment items for final connections.

F. Sealants and Gaskets: Install completely around each unit to make joints airtight, watertight, vermin-proof, and sanitary for cleaning purposes.

1. In general, make sealed joints not more than 1/8-inch wide, and stuff backer rod to shape sealant bead properly, at 1/4-inch depth.

2. Shape exposed surfaces of sealant slightly concave, with edges flush with faces of materials at joint.

3. At internal-corner joints, apply sealant or gaskets to form a sanitary cove, of not less than 3/8-inch radius.

4. Provide sealant-filled or sealant-gasketed joints up to 1/2-inch joint width and metal closure strips for wider joints with sealant application each side of strip.

5. Anchor gaskets mechanically or with adhesives to prevent displacement.

6. All fixtures adjacent to wall shall be sealed to wall as specified.

G. District Furnished/Contractor Installed Equipment:

1. Existing Equipment: The Contractor shall be responsible for removing, cleaning, repairing (if required) and re-installing equipment designated as Existing Equipment, coordinating removal of Existing Equipment with the District. The Contractor shall be responsible for all connectors, valves, regulators, and hard and flexible connections to make the Existing Equipment operational per manufacturer's standards. The Contractor shall coordinate Existing Equipment requiring remote refrigeration with all refrigeration systems, ensuring that such Equipment is operational per manufacturer's standards.

2. New Equipment: The Contractor shall receive, accept, and store District Furnished Equipment at approved, designated area on site. All freight damage will be noted and the Contractor shall file a claim for the damage on behalf of the District. The Contractor shall provide a storage trailer to store District Furnished Equipment if necessary.

3. Final installation of the District Furnished Equipment is the responsibility of the Contractor, who shall be responsible for all connections, valves, regulators, and hard and flexible connections to make the District Furnished Equipment an operating system per manufacturer's standards. The Contractor shall coordinate District Furnished Equipment requiring remote refrigeration with all refrigeration systems, ensuring that such equipment is operational per manufacturer's standards.

4. The District will supply to the Contractor current specification sheets, lists of provided equipment and scheduled shipment and arrival dates. The Contractor shall coordinate all required cutouts and electrical, plumbing, and mechanical coordination with the trades to allow for proper installation.

5. The Contractor shall provide to the District a compact disk with electronic version of all Operation & Maintenance Manuals for new foodservice equipment.

H. Final Connections:

1. Final hook-ups are not part of the scope of work of the FSEC. All final hook-ups (plumbing, mechanical and electrical) shall be part of the General Contractor's area of responsibility. The General Contractor shall make allowances for elbows, traps, etc., and shall make final connections on the job, supply all necessary valves, traps, steam traps, faucets, starting switches for motors, etc., except where specifically noted otherwise in the written specifications.

2. The Contractor shall be responsible for all inter-connections between systems and the foodservice equipment.

I. Installers shall be responsible for verifying dimensions.

3.02 FIELD QUALITY CONTROL

A. Testing: Coordinate start-up of Foodservice Equipment when service lines have been tested, balanced, and adjusted for pressure, voltage, and similar considerations. Do not operate steam lines until they have been cleaned and treated for sanitation. Before testing, lubricate each equipment item in accordance with manufacturer's recommendations.

B. Include in the testing all District Furnished Equipment and Existing Equipment.

C. Test each item of operational equipment to demonstrate that it is operating properly and that controls and safety devices are functioning.

D. Repair or replace equipment found to be defective in its operation, including units that are below capacity or operating with excessive noise or vibration.

E. Testing is to include any service charges due to improper installation, lack of proper connectors, or missing equipment.

3.03 CLEANING

A. After completion of installation and other major work in Foodservice areas, remove protective coverings, if any, and clean Foodservice Equipment, internally and externally.

1. Restore exposed and semi-exposed finishes to remove abrasions and other damages; polish and buff exposed-metal surfaces and touch-up painted surfaces.

2. Replace work that cannot be successfully restored.

B. Final Cleaning: After testing and start-up, and before time of Substantial Completion, clean Foodservice Equipment, and leave in condition ready for use in Foodservice.

3.04 ADJUSTMENT OF EQUIPMENT AND DEMONSTRATION

A. Turn on all mechanical equipment, test for leaks, poor connections, inadequate or faulty performance and correct if necessary; adjust for proper operation.

1. All thermostatically controlled equipment and equipment with automatic features shall be operated for a sufficient length of time to prove controls are functioning as intended.

B. At a time and date selected by the District, the FSEC shall arrange for a demonstration of all new mechanical equipment for the District and his appointed representatives. These demonstrations are to be conducted by factory-trained engineers of the various equipment manufacturers and shall be done in

two stages: one for the operations people and the second for maintenance personnel. A representative of the FSEC must be in attendance at all demonstrations.

C. The FSEC shall provide the District with one copy of a video film in DVD format depicting the operations and maintenance on each piece of new foodservice equipment.

D. The FSEC shall provide all necessary instructional training for all emergency equipment, gas turn-offs, fire extinguishers, high-temperature alarm system, etc., including, if any, emergency generating equipment.

E. The FSEC shall provide all necessary instructional training for all safety equipment.

3.05 CLOSEOUT PROCEDURES

A. Start-up of Foodservice Equipment

1. Utilities (lighting of pilot lights, etc.) by General Contractor

2. FSEC shall provide for Manufacturer's Service Agent to ensure systems are properly connected and are operational per manufacturer's required specification.

3. FSEC shall provide for Manufacturer's Representative to demonstrate how to properly operate all new foodservice equipment.

4. FSEC shall provide manufacturer inspection certification for all new items for District's acceptance, otherwise will consider not meeting the project specifications.

B. Provide services of the Contractor's technical representative and the Manufacturer's technical representative (where required) to instruct District personnel in the operation and maintenance of new foodservice equipment

1. Schedule training with the District.

2. Provide at least 7-day notice of training date to the District.

C. O&M Manuals: Provide a compact disk with electronic version of all Operation & Maintenance Manuals for new foodservice equipment.

D. The Contractor shall provide a walk-through with the District prior to turning the project over to the District for operation.

E. FSEC to provide a complete list of all authorized service providers, names and contact information, including phone numbers and email, for all food service equipment in the contract

3.06 EQUIPMENT SCHEDULE

A. All dimensions are for reference only. Dimensions and site conditions must be field verified.

B. All equipment shall comply with applicable California State Seismic requirements.

C. Foodservice Equipment drawings are part of these specifications.

D. Warranties: Five-year Compressor Warranty. Two-year Parts & Labor Warranty for all new equipment.

E. All roll-in or roll-thru cabinets shall be trim to the wall with 6”H 16ga S/S cove base, 3/8” radius.

F. All plumbing, electrical and gas lines shall be concealed within the building structure to the greatest extent possible. Exposed wiring to be enclosed in S/S casing.

G. It shall be the responsibility of the FSEC to provide S/S covers for all exposed conduit, piping and refrigeration lines in the kitchen spaces.

H. Outdoor Mounting: Provide weather-tight housing and low ambient controls for units mounted outdoors.

I. Where indicated, or required for safety of equipment operator, anchor equipment to floor or wall. Provide legs with adjustable flanged foot where equipment is indicated to be anchored to floor. Install two (2) anchors on each foot and cap off with S/S acorn nuts.

J. All gas appliances shall have gas hose with quick disconnect and seismic restraint (seismic restraints where applicable).

K. All gas appliances with open burners installed in schools shall have Battery spark ignition

L. All mobile units with water lines shall have water hose with quick disconnect and seismic restraint (seismic restraints where applicable).

M. NSF Standards: Comply with applicable National Sanitation Foundation (NSF) standards and recommended criteria including NSF 2 and NSF 7. Provide each principal item of Foodservice Equipment with a NSF Seal of Approval.

N. All Walk-In penetrations to be sealed and insulated with foamed insulation.

O. Where screws are exposed, Stainless Steel Pan Head Screws are to be used. No round head screws to be utilized.

ITEM # 1	CORNER GUARDS & END CAPS
Quantity:	One (1)
Manufacturer:	Custom S/S
Model:	CG-EC

1. One (1) Model CG-EC Furnish and install Corner Guards & End Caps per Plan, Details and General Specifications on Part 2 to Part 3 herein, including: 14ga S/S angle construction.
2. One (1) CORNER GUARDS 2" x 2" angle x full height to ceiling. Provide for all exposed corners; mount bottom flush with top of coved base.
3. One (1) END CAPS 2" x 2" angle x full wall height, similar to Corner Guards but shall extend to cover the full exposed face of the wall.

ITEM # 2 REFRIGERATION RACK- SLAB MTD
Quantity: One (1)
Manufacturer: Coldzone
Model: ET-1

1. One (1) Model ET-1 Furnish and install per plans, details and general specifications in parts 2 to 3 herein, including:
2. ENVIRO-THERM REFRIGERATION SYSTEM
   The packaged refrigeration system is to be U.L. Listed and will be located on a pad outside of the building. This unit includes the outdoor weather housing, compressor and condenser systems and electrical control panel, all housed within a single assembly.
   The outdoor weather shall include a welded, de-burred and cleaned structural steel base frame made of 3-inch members. The exterior housing and access doors will be manufactured of a minimum of 16 gauge-galvanized steel, which has been assembled and cleaned. The frame and housing shall be primed and painted.
   All of the component parts, options and accessories will be provided, mounted, piped and wired, as required by the manufacturer. The system shall be manufactured to operate at: 208-230 volts, 60 phase, 3 hertz.
3. COMPRESSOR AND CONDENSER SYSTEMS
   All compressors will be Copeland hermetic, scroll, digital scroll, Copelematic or discus. All compressors will be manufactured to operate with R-448A refrigerant. Each Compressor system shall be filled with refrigerant compatible oil and will include discharge and suction line vibration protection for Copelametic and Discus compressors, dual pressure control with stainless steel braided piping, liquid line filter-dryer, moisture indicating sight glass, flooded head pressure control valve and crankcase heater.
   Each of these systems shall also include a receiver tank capable of accepting the entire systems refrigerant charge without exceeding 90% of its volumetric capacity. Each receiver will be provided with a pressure relief vent and, at its inlet and outlet and an isolation valve with a service port. Additionally, all compressor systems that will operate at suction temperatures below 0°F shall include a suction line accumulator.
   The condenser system shall include the Multi-Circuited condenser rated for 120 F ambient, 10 - 12 fins per inch, 3⁄4 horse power ECM condenser fan motors with 24 inch fan blades mounted in a venturi contoured air-scoop protected by plastic coated fan guards, and flooded head pressure controls. The compressors and condenser circuits shall be sized to operate at an average temperature differential between the ambient and condensing temperatures of 20°F.
4. CONTROL PANEL
   The exterior mounted, weather proof, NEMA 3 electrical control panel will be manufactured of 14 gauge-galvanized steel, which has been assembled, welded, de-burred and cleaned. The control panel shall include hinged access doors with a built-in fused disconnect switch inter-locked to shutoff all system electrical power when the doors are opened, circuit breakers and contactors for each compressor and circuit breakers, start capacitors, and fan cycle control thermostats for each of the condenser fan motors. A wiring diagram of the refrigeration system shall be included and permanently affixed to the inside of the refrigeration system. All internal wiring shall be held in place with fasteners and individually numbered. The wire numbers shall be shown on the wiring diagram.
5. EVAPORATOR COILS WITH EcoNet INTELLIGENT CONTROL
   Evaporator coils shall be direct expansion type fabricated of cop¬per tubes with aluminum fins.
   Low temperature evaporator coils shall be provided with solenoid valve, electronic thermo¬static expansion valve, thermostat for medium temp evaporators (thermostat for low-temp evaporators is part of the demand defrost system), and suction "P" trap piped and wired to the junction box for positive pump-down. Evaporators come standard in a dual voltage configuration, include ECM type fan motors that will operate at the dual speeds of 1,550 rpm max and 900 rpm min, and are designed to function with new “wide glide” refrigerants.
   EcoNet® Enabled Unit Coolers are electronically controlled evaporators designed for energy efficiency and easier installation. EcoNet Enabled Unit Coolers save energy in refrigeration systems through precise superheat and space temperature control, fan cycling, and controlling how often the system goes into

defrost based on compressor runtime. It eliminates unnecessary defrosts, maximizes energy efficiency with less compressor runtime, reduces liability by eliminating icing issues, reduces fan speed to 50% during off cycle to save energy, and reduces temperature fluctuations by regulating defrosts for improved product quality.

No inter-wiring is required between the Enviro-Therm and low-temp evaporator coils with EcoNet.

6. GENERAL NOTES

I. GENERAL CONTRACTOR

1. Contractors shall verify all dimensions and coordinate with other trades.
2. General contractor shall prepare the platform, curbed openings and weatherproofing the same after installation.

II. REFRIGERATION CONTRACTOR

1. The complete system shall be evacuated with vacuum pump.
2. Charge, test and adjust each unit to assure proper operation.
3. All copper tubing to be refrigerant grade ACR. or type "l".
4. Silver solder and/or sil-fos shall be used for all refrigerant piping. Soft solder is not acceptable.
5. All piping to be pressure tested with nitrogen at 3oo psi. After the condensing unit and coil have been connected, the balance of the system shall be leak tested with all valves open.
6. Refrigeration contractor to provide and install drain line heater in freezer to be connected by electrical contractor.

III. ELECTRICAL CONTRACTOR

1. Electrical contractor to connect drain line heater in freezer.
2. Electrical contractor to provide power for refrigeration package and evaporator coils.
3. All electrical wiring and installation shall be in accordance with the wiring diagram and local codes.

IV. PLUMBING CONTRACTOR

1. Plumbing contractor to provide ACR or type "l" copper drain lines for walk-in refrigeration and freezer, pitched 1/2" per foot of run. In freezer, unheated drain line must be outside of insulation to prevent freezing. Trap drain line outside of refrigerated space to avoid entrance of warm and moist air.
2. Plumbing contractor to provide individual drain line for each evaporator unless otherwise called for.
3. All plumbing installation shall be in accordance with local codes.

ITEM # 3 S/S CHASE FOR REFRIGERATION PIPING
Quantity: One (1)
Manufacturer: Custom S/S
Model: CUSTOM

1. One (1) Model CUSTOM: Furnish and install Chase per Plan, Details and General Specifications on Part 2 to Part 3 herein including: fabricate of minimum 16 GA S/S
2. Refer to detail 62 Sheet FS-402

ITEM # 4 SECURITY CHAIN LINK FENCE W/ COVER FOR REFRIGERATION RACK
Quantity: One (1)
Manufacturer: Custom
Model: CUSTOM

1. One (1) Model CUSTOM PER ARCHITECTS SPECIFICATIONS

ITEM # 5 WALK-IN FREEZER- EXTERIOR UNIT
Quantity: One (1)
Manufacturer: Thermalrite Refrigeration
Model: WIF

1. One (1) Model WIF Furnish and Install Thermalrite Walk In Freezer with Trim size per Plan. UL-listed, NSF No. 7 approved prefabricated modular construction to hold -10 degrees F per plans, details and general specifications in parts 2 to 3 herein, including:
2. Panel insulation: 4” DURATHANE, high density all-urethane foamed-in-place (Class 1). Provide necessary labor, equipment and tools for complete installation to conform with drawings and written specifications including:
3. 19' 7" x 10' 11 1/4" x 9' 8" foam rail walk-in Holding freezer without floor
4. To include Item #11 - Predadoor roll Down Door.
5. Entire assembly to be provided as floorless with flat bottom wall panels installed in a 9” building floor depression and held in place with wall anchors. Walls to be installed with (9" floor depression with 6" insulation). (3) layers of 2” urethane slab insulation with 10 mil polyethylene sheeting vapor barrier to be installed by FSEC. 15# tar paper to be provided (supplied by FSEC).
6. Wearing floor by GC (install after assembly of walk-in box): Poured Epoxy w/ 6" H Coved Base w/ 3/8" radius for the interior by General Contractor. Provide Provide 16 Ga. S/S 6” high coved base with NSF 3/8” radius for the exposed exterior of the walk-in cooler.
7. Note: G.C. to provide and install backerboard for epoxy coved base adhesion
8. Metal Finishes: Interior walls & exposed exterior shall be 20 GA. White Smooth Galvanized.; Unexposed exterior to be 26 Ga. Stucco Embossed Galvanized Steel. Exposed exterior walls to the interior of the building to be 20 GA Stainless.
9. Exposed exterior to the Kitchen to be provided with 48” high AFF 14 Ga. S/S wainscot. Wainscot shall be mounted with adhesive and sealed with silicone. No external fasteners such as screws or pop rivets shall be applied as fastening for the wainscot.
10. (1) 36” x 80” High 20 Ga. S/S flush mounted entrance door with hardware – NSF Listed. An armored anti-sweat heater cable shall be run in a breaker strip located behind a removable heavy gauge stainless steel trim for easy access to heater cable. Heater cable shall be run under threshold
11. One (1) Kason Model K27C K27C handle with Mortise deadbolt latch & inside Safety Release.
12. Three (3) Kason Model K1248 Doors provided with (3) spring-loaded hinges.
13. One (1) Kason Model K1094 Hydraulic rack and pinion door closer.
14. One (1) Kason Model 1806 LED light fixture w/ bulb, mounted at door
15. 48” High AFF 14 Ga. Stainless Steel interior & exterior kickplates.
16. 14"x24" heated peep window with heated frame, 43" max mounting height
17. Vinyl strip curtains provided at doors, 8"W x .080" thick of overlapping strips, heavy-duty transparent PVC material.
18. One (1) Kason Model 1810LX4000 (LOT) 48” LED light fixtures with bulbs. Quantities per plans. Wire thru door monitor/switch by EC.
19. Seismic support package to be provided as detailed on provided plans
20. Trim matching the walk-in finish and fabricated to fit building conditions shall be supplied to close all joints between walk-in and building walls. Enclosure panels matching the walk-in finish shall be supplied to close off space between top of walk-in and building ceiling.
21. Exterior Trim: Colored stucco to match color of walk in per plans
22. Exposed exterior to be provided with 42” high AFF 14 Ga. stainless steel wainscot. Wainscot shall be mounted with adhesive and sealed with silicone. No external fasteners such as screws or pop rivets shall be applied as fastening for the wainscot. Provide 14GA corner guards at corners.
23. Roof Cap: Duro-Last Tapered Membrane - Mounted To Building - White, 40 Mil - Dim A = 21' 7" Dim B = 22' 11" Lap Length = 21' 7". Duro-Last Duro-Blue Separation Slip Sheet (1 rolls). Silicone (9 tubes) - Freight allowed
    EPS Sloped foam: Dim A=21' 7" Dim B=22' 11" Slope Direction=20' 11". - Freight allowed
    Add for 1 Yr Parts/Labor warranty on Box and Accessories – This warranty only covers Defects in Workmanship and Material – This does NOT include Refrigeration or Installation Related Issues - Freight allowed
24. The walk-ins shall be supplied with a complete set of installation, operational and maintenance instructions to cover erection of the walk-in, installation operating procedures and routine maintenance schedule. It is the responsibility of the installation contractor to follow the complete instructions to

ensure proper installation of the walk-in panels.
Walk-ins shall be set up at the manufacturer's facility prior to shipment and a quality control inspection performed on the product. A digital photograph of the walk-ins set up must be included at the manufacturer's facility shall be provided for the Food Equipment Contractor's permanent records.

25. One (1) Model SMARTRITE Unit to be provided with Smartrite Walk-In Monitoring system.
26. OUTDOOR INSTALLATION: For weatherproof/outdoor application, the walk-in shall be provided with a single-ply vinyl weathercap. The weathercap shall consist of a waterproof, durable, high-tenacity fabric membrane. Weathercap shall overlap walk-in panels or turn up at building wall 6" on all sides. Weathercap trim to match exterior panel finish shall be provided to secure weathercap to walk-in. Sloped foam consisting of expanded poly-styrene and a 4 mil polyethylene slip-sheet shall be provided with weathercap. The polyethylene shall be installed between the vinyl weathercap and the sloped foam. The sloped foam roof is necessary to provide proper drainage from the top of the walk-in. Sloped foam roof shall start at ¼" thick and increase a thickness of ¼" every 11-1/2". All installation hardware, trim and flashing shall be provided to secure weathercap to walk-in and against building wall as shown on detail. The roof cap shall be covered by a ten-year limited warranty.
27. TRANSITION TRIM: Heavy guage S/S trim shall be provided at area between walk-in and building wall to support sloped foam and vinyl weathercap
28. NOTE: Verify field dimensions and site conditions prior to fabrication.

ITEM # 6 REFRIGERATION SYSTEM (EVAPORATOR COILS) - PART OF REFRIGERATION RACK-FOR ITEM 11
Quantity: One (1)
Manufacturer: Coldzone
Model: CUSTOM

1. One (1) Model CUSTOM Furnish and install Evaporator Coils per Plan, Details and Specifications on FS-302.
   The evaporator assemblies, and the parts associated with them, will be mounted inside of the walk-ins. Each evaporator coil shall include a thermostatic expansion valve, liquid line solenoid valve and thermostat piped, mounted and wired by the manufacturer. In cases where two (2) or more evaporator coils are to be piped to a single compressor the thermostat and liquid line solenoid valve will be shipped loose to be mounted and wired at the job site.
2. NOTE: FSEC to verify size of Suction and Liquid Line required
3. Note: 100% Redundancy

ITEM # 7 MOBILE STORAGE SHELVING UNIT (4-TIER)
Quantity: Nine (9)
Manufacturer: Metro
Model: NK3

1. Nine (9) Model NK3 Super Adjustable Super Erecta® Shelf, wire, Size per Plan x 62-9/16"H. Each unit to contain (4) 63UPK3 posts, (2) 5PC & (2) 5PCB casters.
2. Provide all necessary components for complete installation.

ITEM # 8 SPARE NO.

ITEM # 9 WALK-IN COOLER- EXTERIOR UNIT
Quantity: One (1)
Manufacturer: Thermalrite Refrigeration
Model: WIC

1. One (1) Model WIC Furnish and Install Thermalrite Walk In Cooler with Trim size per Plan. UL-listed, NSF No. 7 approved prefabricated modular construction to hold +36 degrees F per plans, details and general specifications in parts 2 to 3 herein, including:
2. Panel insulation: 4" DURATHANE, high density all-urethane foamed-in-place (Class 1). Provide necessary labor, equipment and tools for complete installation to conform with drawings and written specifications including:
3. 19' 7" x 9' 11 3/4" x 9' 8" foam rail walk-in Holding cooler without floor4. Entire assembly to be provided as floorless with flat bottom wall panels installed in a 9" building floor depression and held in place with wall anchors. Walls to be installed with (9" floor depression with 6" insulation). (3) layers of 2" urethane slab insulation with 10 mil polyethylene sheeting vapor barrier to be installed by FSEC. 15# tar paper to be provided (supplied by FSEC).
5. Wearing floor by GC (install after assembly of walk-in box): Poured Epoxy w/ 6" H Coved Base w/ 3/8" radius for the interior by General Contractor. Provide Provide 16 Ga. S/S 6" high coved base with NSF 3/8" radius for the exposed exterior of the walk-in cooler.
6. Note: G.C. to provide and install backerboard for epoxy coved base adhesion
7. Metal Finishes: Interior walls & exposed exterior shall be 20 GA. White Smooth Galvanized.; Unexposed exterior to be 26 Ga. Stucco Embossed Galvanized Steel. Exposed exterior walls to the interior of the building to be 20 GA Stainless.
8. Exposed exterior to the Kitchen to be provided with 48" high AFF 14 Ga. S/S wainscot. Wainscot shall be mounted with adhesive and sealed with silicone. No external fasteners such as screws or pop rivets shall be applied as fastening for the wainscot.
9. (1) 36" x 80" High 20 Ga. S/S flush mounted entrance door with hardware – NSF Listed. An armored anti-sweat heater cable shall be run in a breaker strip located behind a removable heavy gauge stainless steel trim for easy access to heater cable. Heater cable shall be run under threshold
10. One (1) Kason Model K27C K27C handle with Mortise deadbolt latch & inside Safety Release.
11. Three (3) Kason Model K1248 Doors provided with (3) spring-loaded hinges.
12. One (1) Kason Model K1094 Hydraulic rack and pinion door closer.
13. Vinyl strip curtains provided at doors, 8"W x .080" thick of overlapping strips, heavy-duty transparent PVC material.
14. To accommodate Item #11 - Predadoor roll Down Door.
15. One (1) Kason Model 1806 LED light fixture w/ bulb, mounted at door
16. 48" High AFF 14 Ga. Stainless Steel interior & exterior kickplates.
17. 14"x24" heated peep window with heated frame, 43" max mounting height
18. One (1) Kason Model 1810LX4000 (LOT) 48" LED light fixtures with bulbs. Quantities per plans. Wire thru door monitor/switch by EC.
19. Seismic support package to be provided as detailed on provided plans
20. Trim matching the walk-in finish and fabricated to fit building conditions shall be supplied to close all joints between walk-in and building walls. Enclosure panels matching the walk-in finish shall be supplied to close off space between top of walk-in and building ceiling.
21. Exterior Trim: Colored stucco to match color of walk in per plans
22. Exposed exterior to be provided with 42" high AFF 14 Ga. stainless steel wainscot. Wainscot shall be mounted with adhesive and sealed with silicone. No external fasteners such as screws or pop rivets shall be applied as fastening for the wainscot. Provide 14GA corner guards at corners.
23. Roof Cap: Duro-Last Tapered Membrane - Mounted To Building - White, 40 Mil - Dim A = 21' 7" Dim B = 22' 11" Lap Length = 21' 7". Duro-Last Duro-Blue Separation Slip Sheet (1 rolls). Silicone (9 tubes) - Freight allowed
    EPS Sloped foam: Dim A=21' 7" Dim B=22' 11" Slope Direction=20' 11". - Freight allowed
    Add for 1 Yr Parts/Labor warranty on Box and Accessories – This warranty only covers Defects in Workmanship and Material – This does NOT include Refrigeration or Installation Related Issues - Freight allowed
24. The walk-ins shall be supplied with a complete set of installation, operational and maintenance instructions to cover erection of the walk-in, installation operating procedures and routine maintenance schedule. It is the responsibility of the installation contractor to follow the complete instructions to

ensure proper installation of the walk-in panels.
Walk-ins shall be set up at the manufacturer's facility prior to shipment and a quality control inspection performed on the product. A digital photograph of the walk-ins set up must be included at the manufacturer's facility shall be provided for the Food Equipment Contractor's permanent records.

25. One (1) Model SMARTRITE Unit to be provided with Smartrite Walk-In Monitoring system.
26. OUTDOOR INSTALLATION: For weatherproof/outdoor application, the walk-in shall be provided with a single-ply vinyl weathercap. The weathercap shall consist of a waterproof, durable, high-tenacity fabric membrane. Weathercap shall overlap walk-in panels or turn up at building wall 6" on all sides. Weathercap trim to match exterior panel finish shall be provided to secure weathercap to walk-in. Sloped foam consisting of expanded poly-styrene and a 4 mil polyethylene slip-sheet shall be provided with weathercap. The polyethylene shall be installed between the vinyl weathercap and the sloped foam. The sloped foam roof is necessary to provide proper drainage from the top of the walk-in. Sloped foam roof shall start at ¼" thick and increase a thickness of ¼" every 11-1/2". All installation hardware, trim and flashing shall be provided to secure weathercap to walk-in and against building wall as shown on detail. The roof cap shall be covered by a ten-year limited warranty.
27. TRANSITION TRIM: Heavy guage S/S trim shall be provided at area between walk-in and building wall to support sloped foam and vinyl weathercap
28. NOTE: Verify field dimensions and site conditions prior to fabrication.

ITEM # 10 REFRIGERATION SYSTEM (EVAPORATOR COILS) - PART OF REFRIGERATION RACK-FOR ITEM 11
Quantity: One (1)
Manufacturer: Coldzone
Model: CUSTOM

1. One (1) Model CUSTOM Furnish and install Evaporator Coils per Plan, Details and Specifications on FS.-302.
   The evaporator assemblies, and the parts associated with them, will be mounted inside of the walk-ins. Each evaporator coil shall include a thermostatic expansion valve, liquid line solenoid valve and thermostat piped, mounted and wired by the manufacturer. In cases where two (2) or more evaporator coils are to be piped to a single compressor the thermostat and liquid line solenoid valve will be shipped loose to be mounted and wired at the job site.
2. NOTE: FSEC to verify size of Suction and Liquid Line required
3. Note: 100% Redundancy

ITEM # 11 ROLL UP VINYL DOORS
Quantity: One (1)
Manufacturer: Rytec Doors
Model: PREDADOOR NXT

1. One (1) Model PREDADOOR NXT Furnish per plans, details and general specifications, including:
2. PredaDoor NXT High-Speed Rolling Door Variable speed AC drive motor with dynamic braking and absolute encoder. Dual chamber, auto-reversing soft edge of bottom bar.
   Two sets of thru beam photo eyes are standard.
   Quick Set self-repairing breakaway bottom bar to reset the door upon impact from either direction.
   System 4 controller with self-diagnostic capabilities in NEMA-4X rated enclosure.
   Pathwatch Safety System (2 sets) standard.
   1 PD5500NXT- 60"wide X 84"high
   1 Vinyl Panel
   1 Aluminum Windribs - Std
   1 Full-Width Vision Panel
   1 Single Source Transformer

1 Unheated Blower with Supplemental Control Panel and Wall Brackets (Doors 5'-7'11" wide)
1 NEMA 4X SYS 4 Control Box (Standard) 8.5" x 16.5"
1 Pathwatch Safety System (2 Sets) 1 Aluminum Motor Cover (Hood Required)
1 Slant Aluminum Hood-0'-10'
2 Motion Detector
2 Pullcord

3. One (1) Model INSTALL RYTEC DOORS MUST BE INSTALLED BY A RYTECH INSTALLATION TECHNICIAN. RytecDoors.com 888-GO-RYTEC
info@rytecdoors.com P: 262.677.9046 F: 262.677.2058 One Cedar Parkway, PO Box 403, Jackson, WI 53037-0403

ITEM # 12 MOBILE STORAGE SHELVING UNIT (4-TIER)
Quantity: Seven (7)
Manufacturer: Metro
Model: NK3

1. Seven (7) Model NK3 Super Adjustable Super Erecta® Shelf, wire, Size per Plan x 62-9/16"H. Each unit to contain (4) 63UPK3 posts, (2) 5PC & (2) 5PCB casters.
2. Provide all necessary components for complete installation.

ITEM # 13 SPARE NO.

ITEM # 14 CURB MTD. EMPLOYEE LOCKERS
Quantity: One (1)
Manufacturer: Penco Lockers
Model: 6231R

1. One (1) Model 6231R (LOT) Vanguard, Classic III Recessed Handle, 2-tier lockers 12"L x 12"W x 36"H per opening. Size per plan x 72"H, mount on galvanized curb. Manufacturer's standard model with Slope Top, Padlock attachment (padlocks not included). Powder coat baked enamel finish - Color selection by the District.
2. ACCESSORIES: (1) ADA-compliant locker - assign bottom center section and provide appropriate symbol sign on the door.
3. NOTE: Latch and locking hardware shall not require tight grasping, tight pinching, or twisting of the wrist to operate. Provide shelf and pole at 48" max AFF and lower shelf at 15" min AFF (Reach requirements). Provide 5% of total lockers or one minimum accessible locker per CBC Section 11B-811.

ITEM # 15 WALL BACKING (NOT SHOWN ON FLOOR PLAN)
Quantity: One (1)
Manufacturer: Custom S/S

1. One (1) Furnish and install Wood Wall Backing per Plan, Seismic Details and General Specifications on Part 2 to Part 3 herein, including: Minimum 12"W x height per Seismic sheet. Wall backing shall run 6" beyond full length of equipment item at each side.
GC shall provide and install wood blocking. Secure wall blocking in between studs.

END OF SECTION

SECTION 22 0511

SUPPLEMENTARY PLUMBING REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies supplementary requirements for plumbinginstallations and includes requirements common to more than one section of Division 22. It expands and supplements the requirements specified in Section 22 0500 "Common Work Results for Plumbing."

1.02 DESCRIPTION

A. Provide a complete and operable installation, including all labor, supervision, materials, equipment, tools, apparatus, transportation, warehousing, rigging, scaffolding and other equipment and services necessary to accomplish the work in accordance with the intent and meaning of these drawings and specifications.

1.03 COORDINATION

A. Coordination of the work is the responsibility of the Contractor.

B. Contractor shall designate an individual competent and versed in the plumbing trades to coordinate the plumbing work with the work of other trades.

1.04 DEFINITIONS (AS USED ON DIVISION 22 DRAWINGS AND HEREIN)

A. "Provide" means furnish, install, and connect unless otherwise described in specific instances.

B. "Piping" means pipes, fittings, valves, and all like pipe accessories connected thereto.

C. "Extend", "Submit", "Repair" and similar words mean that the Contractor (or his designated subcontractor) shall accomplish the action described.

D. "Codes" or "Code" means all codes, laws, statutes, rules, regulations, ordinances, orders, decrees, and other requirements of all legally constituted authorities and public utility franchise holders having jurisdiction.

E. "Products", "Materials" and "Equipment" are used interchangeably and mean materials, fixtures, equipment, accessories, etc.

F. "Utility Areas" are defined as mechanical, electrical, janitorial, and similar rooms or spaces which are normally used or occupied only by custodial or maintenance personnel. "Public Areas" are defined as the rooms or spaces, which are not included in the utility areas definition.

G. "Building Boundary" includes concrete walkways immediately adjacent to the building structure.

H. "Below Grade" means buried in the ground.

I. "Substantial Completion" means all components of all systems are functioning but lacking in final adjustment.

J. Pressure rating specified (such as for valves and the like) means design working pressure for and with references to the fluid, which the device will serve.

1.05 RELATED WORK

A. Coordination: Refer to Architectural, HVAC, Plumbing, and Electrical Drawings for the construction details and coordinate the work of this Division with that of other Divisions. Order the work of this Division so that progress will harmonize with that of other Divisions and all work will proceed expeditiously. The work of this Division shall include direct responsibility for the correct placing and connection of Plumbingwork in relation to the work of other Divisions.

B. Examine other Divisions for work related to the Work of this Division, especially Divisions 23 & 26.

1.06 EXISTING CONDITIONS

A. Visit the site prior to bidding and investigate the existing conditions, which affect or will be affected by the work of this Division. Become thoroughly familiar with the working conditions and take into account any special or unusual features peculiar to this job. By the act of submitting a Bid, the Contractor will be deemed to have complied with the foregoing, to have accepted such conditions, and to have made allowance therefore in preparing his Bid.

B. The locations of existing concealed utility lines are shown in accordance with reference data received by the Architect. The Architect does not guarantee the accuracy of such data. The points of connection are therefore approximate, and the Bidder shall include adequate funds in his Bid to cover costs of connection regardless of their exact location.

C. Exercise extreme caution during trenching operations. Repair the damage caused by such operations, to existing utility lines at no cost to the Owner, whether the lines are shown on drawings or not.

1.07 DRAWINGS AND SPECIFICATIONS

A. These drawings and specification do not include necessary components for construction safety.

B. All provisions shall be deemed mandatory except as expressly indicated as optional by the word "may" or "option."

C. Except where dimensioned, the drawings relating to this division are a diagrammatic presentation of the design concept, which indicates the general area where piping is to be run. The drawings do not necessarily indicate any and all offsets and configurations required for coordination with other trades. The contractor is responsible for the correct placing of his work, and the proper location and connection of his work in relation to the work or other trades.

1.08 WATER (DOMESTIC AND FIRE), SANITARY SEWERS AND NATURAL GAS SERVICES

A. Within 5 days after award of Contract, notify the serving utilities that the project is under construction and apply for permanent service in the name of the Owner. Furnish pertinent load and location information to them including the required dates for permanent service. Verify service locations and conform to utility company requirements.

B. Contractor shall pay charges for permanent service connections levied by the utilities for which he will be reimbursed by the Owner. The reimbursement shall be limited to the actual amount of the utility service charges and a copy of the billing from the utility company shall accompany the Contractor's invoice.

1.09 PERMITS AND INSPECTIONS

A. Obtain, schedule, and pay for permits, licenses, approvals, tests, and inspections required by legally constituted authorities and public utility franchise holders having jurisdiction over the work.

B. Afford the Architect's representative every facility for evaluating the skill and competence of the mechanics and to examine the materials. Concealed work shall be reopened when so directed during his periodic visits.

1.10 CODES AND REGULATIONS

A. By submitting a Bid, Contractor is deemed to represent himself as competent to accomplish the work of this Division in conformance with applicable Codes. In case of conflict between the Contract Documents and Code requirements, the Codes shall take precedence. Should such conflicts appear, cease work on the parts of the contract affected and immediately notify the Architect in writing. It shall be the Contractor's responsibility to correct, at no cost to the Owner, any work he executes in violation of Code requirements. Specific references to codes elsewhere in this Division are either to aid the Contractor in locating applicable information or to deny him permission to use options, which are permitted by Codes.

B. Applicable Codes: (Current editions unless otherwise noted)
   1. All local codes; City and/or County as applicable.
   2. OSHA requirements.
   3. California Building Code.
   4. California Code of Regulations (CCR) Titles (as applicable).
   5. Fire Marshal Regulations.
   6. State, County, City Health Department Ordinances and Regulations.
   7. Regulations of all other authorities having jurisdiction.
   8. California Mechanical Code.
   9. California Plumbing Code.

C. Where conflict or variation exists amongst Codes, the most stringent shall govern.

1.11 RECORD AND DOCUMENTATION

A. Accumulate the following and deliver to the Owner's representative prior to final acceptance of the work.
   1. Record (As-Built) Drawings:
      a. Maintain in good order in the field office a complete set of prints for all work being done under Division 22. Update the drawings daily with neat and legible annotations in red ink showing the work as actually installed.
      b. The actual size, location and elevation of all buried lines, valve boxes, manholes, monuments, and stubouts shall be accurately located and dimensioned from building walls or other permanent landmarks.
      c. Furnish the original marked up AS-Built drawings and an electronic copy in AutoCAD-14 format.
   2. Operation and Maintenance Manual: Furnish an operation and maintenance manual covering the stipulated Plumbing systems and equipment. Seven copies of the manual, bond in hardback binders or an approved equivalent shall be provided to the Architect.
   3. Furnish one complete manual prior to the time that system or equipment tests are performed.
   4. Furnish the remaining manuals before the contract is completed.

5. The following identification shall be inscribed on the cover:

   OPERATION AND MAINTENANCE MANUAL
   PROJECT TITLE . . . . . .
   CONTRACTOR NAME & CONTACT INFORMATION

6. Provide a Table of Contents.
   a. Insert tab sheets to identify discrete subjects.
   b. Instruction sheets shall be legible and easily understood, with large sheets of drawings folded in.
   c. The manual shall be complete in all respects for all materials, piping, valves, devices and equipment, controls, accessories and appurtenances stipulated. Include as a minimum the following:
      1) Updated approved materials lists, shop drawings and catalog information of all items of HVAC system equipment.
      2) System layout showing piping, valves, and controls.
      3) Wiring and control diagrams with data to explain detailed operation and control of each component.
      4) A control sequence describing start-up, operation, and shutdown.
      5) Detailed description of the function of each principal component of the system.
      6) Procedure for starting.
      7) Procedure for operating.
      8) Shut-down instructions.
      9) Installation instructions.
      10) Adjustments, maintenance, and overhaul instructions.
      11) Lubrication schedule including type, grade, temperature range and frequency.
      12) Safety precautions, diagrams, and illustrations.
      13) Test procedures.
      14) Performance data.
      15) Parts list, with manufacturer's names and catalog numbers.
      16) Preventive maintenance schedule.
      17) Service organization with name, address, and telephone number.
      18) Valve identification chart and schedule.
      19) ASME certificates.
      20) Hydronic balance report.

B. Standards Compliance: Where equipment or materials are specified to conform to requirements of standards of recognized technical or industrial organizations such as American National Standards Institute (ANSI) American Society for Mechanical Engineers (ASME) American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), American Society for Testing Materials (ASTM), Underwriters Laboratories (UL), American Gas Association (AGA), American Society of Plumbing Engineers (ASPE),, American Refrigeration Institute (ARI), or National Electrical Manufacturer's Association (NEMA), that use a label or published listing as a method of indicating compliance, proof of such conformance shall be submitted and approved. The label or listing of the specified organization will be acceptable evidence.

C. Certificates of Conformance or Compliance: Submit original and not pre-printed certifications. Do not make statements in the certifications that could be interpreted to imply that the product does not meet all requirements.

D. Certified Test Reports: Certified Test Reports are reports of tests conducted on previously manufactured materials or equipment identical to that proposed for use. Before delivery of materials and equipment, submit certified copies of test reports specified in the individual sections.

E. Factory Tests: Factory tests are tests, which are required to be performed on the actual materials or equipment, proposed for use. Submit results of the tests in accordance with the requirements for laboratory test results of this Contract.

F. Permits and Certificates of Inspection: Furnish the originals.

G. Testing procedures and test results required in this and other sections. Furnish 2 copies.

H. Other data required by other sections of this Division. Furnish 2 copies.

1.12 CONSTRUCTION COST BREAKDOWN

A. Prepare and submit for review a construction cost breakdown for the major subdivisions of the PLUMBING scope of work in accordance with General and Supplemental Conditions and Project Specification.

B. Subdivide each item on the breakdown into two headings: labor and materials. Include overhead and profit in each entry.

C. Submit one copy of the breakdown directly to the Engineer and the remaining copies sent through regular channels.

1.13 TOOLS

A. Provide all special tools needed for proper operation and routine adjustment and maintenance of systems and equipment. Deliver tools to Owner's representative and request a receipt for same.

1.14 WARRANTIES

A. Refer to Project Specification for procedures and submittal requirements for warranties. Refer to individual equipment specifications for warranty requirements.

B. Where periods more than one year are specified in the specifications, such longer periods shall govern. However, when any component fails at any time during this period, the warranty period for such component and all other components, which are inactive because of, said failure shall be suspended. The warranty period for such components shall resume to run for the remaining portion of the warranty period when failed component is completely repaired and in operation; however, in no case shall the resumed portion of the warranty period be less than 3 months in duration.

C. Neither payment for work, nor total or partial occupancy of work by the Owner, within or prior to the warranty period specified, shall be construed as acceptance of faulty work or shall condone any negligence or omission of Contractor in doing the work.

D. Compile and assemble the warranties specified in Division 22, into a separated set of vinyl covered, three ring binders, tabulated, and indexed for easy reference.

E. Provide complete warranty information for each item to include product or equipment to include date of beginning of warranty or bond; duration of warranty or bond; and names and addresses, and telephone numbers and procedures for filing a claim and obtaining warranty services.

1.15 SEISMIC RESTRAINT

A. Provide seismic restraint for plumbing equipment, piping, and accessories.

B. Contractor shall submit certification of suitability of seismic restraint methods signed by Licensed Structural Engineer registered in the State of California.

1.16 SYSTEM OPERATIONAL TESTS

A. The Contractor shall inform the Owner one week prior to start of testing in order that the Owner's representative may be present.

B. After balancing and prior to final inspection, the contractor shall operate all plumbing systems trouble free and stable. Contractor shall submit a written report certified by the Owner's representative indicating the successful completion of a stable and trouble-free testing.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Standard Products: Materials and equipment shall be essentially the standard cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be their latest standard designs that comply with the specification requirements.

B. Materials and equipment shall duplicate items that have been in satisfactory commercial or industrial use at least two years prior to bid opening unless more stringent requirements are specified. Where two or more units of the same type of equipment are required, these units shall be products of a single manufacturer. The components thereof, however, are not required to be exclusively of the same manufacturer.

C. Each major component of equipment shall have manufacturer's name, address, model, and serial number on a nameplate securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

D. In these specification and drawings, whenever more than one (1) manufacturer’s product is specified, the manufacturer specified on the drawings and the first named product in these specifications is the basis of design and the use of alternate-named manufacturer’s product or substitutes shall comply with the requirements of Section 22 0500.

2.02 PRODUCT LISTING

A. When two or more items of same material or equipment are required (pipe and fittings, plumbing fixtures, pumps, valves, etc.) they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, sheet metal, wire, steel bar stock, welding rods, solder, fasteners, and similar items used in Work, except as otherwise indicated.

2.03 NAMEPLATE DATA

A. Provide permanent operational data nameplate on each item of power operated plumbing equipment, indicating manufacturer, product name, model name, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data. Locate nameplates in an accessible location.

2.04 SUBSTITUTIONS

A. General: Submittals of "Substitutions" shall be in accordance with requirements of Division 01.

B. By proposing a substitution, it is deemed that the Contractor shall bear the cost, of any and all design and construction changes (whether architectural, structural, electrical, and Plumbing) necessary to accommodate the substitution, if said substitution is accepted.

C. Specific: Refer to Specification Sections 22 0500 & 22 0512 for additional requirements.

2.05 SUBMITTALS

A. General: Make submittals in accordance with requirements of Division 01.

B. Specific: Refer to Specification Sections 22 0500 for additional requirements.

PART 3 - EXECUTION

3.01 WORKMANSHIP AND INSTALLATION METHODS

A. Workmanship shall be in the best standard practice of the trade.

B. Install equipment in accordance with the manufacturer's instructions and recommendations unless otherwise noted or specified.

3.02 TESTS

A. General:
1. Demonstrate that all components of the work of this Division have been provided and that they operate in accordance with the Contract Documents.
2. Provide instruments and personnel for tests and demonstrations. Submit signed test results.

B. Specific: Refer to the other sections of this Division for test requirements.

3.03 DELIVERY, HANDLING, STORAGE OF MATERIALS AND PROTECTION OF WORK

A. Protect materials against dirt, water, chemical and mechanical damages both while in storage and during construction.

B. Cover materials in such a manner that no finished surfaces will be damaged, marred or splattered with plaster or paint, and all moving parts will be kept clean and dry.

C. Replace or refinish any damaged materials including fronts of control panels, piping, insulation, and equipment.

D. All plumbing fixtures, vents, and waste linesshall be aggressively protected during construction process to ensure that no contamination of the system occurs.

E. The use of permanently installed plumbing fixtures during construction is prohibited.

F. Keep cabinets and other openings closed to prevent entry of foreign matter.

G. Specific: Refer to other sections of this Division for additional requirements.

3.04 PROJECT CONDITIONS

A. Check and coordinate for clearance, accessibility, and placement of equipment either by going through openings provided or by placing equipment during construction. Ordering of equipment to be shipped disassembled, or disassembly of equipment at Project Site and reassembly of equipment to accomplish this requirement shall be executed without additional cost.

Where provided openings are inadequate to accommodate equipment, provide new openings and restoration of same, all at no additional cost. Obtain written approval for new openings before proceeding.

B. Verify location of all plumbing fixtures and equipment within finished spaces with the Architectural Drawings. In the event that Plumbing Drawings do not indicate exact locations, or are in conflict with the Architectural Drawings, obtain information regarding proper locations. Installation of work without proper instruction under such circumstances will result in relocation of work, when directed, without additional cost.

3.05 INSTRUCTION TO OWNER PERSONNEL

A. Contractor shall furnish, without additional expense to the Owner, the services of competent instructors who will give full instruction to the designated personnel in the adjustment, operation, and maintenance, including pertinent safety requirements, of the equipment or system specified. Each instructor shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance of work. Instruction shall be given at the Owner's convenience. The number of man-days (eight-hours) of instruction furnished shall be as specified in other sections. When more than four man-days of instruction are specified, approximately half of the time shall be used for classroom instruction. All other time shall be used for instruction with the equipment or system. When significant changes or modifications are made under the terms of the contract, provide additional instructions to acquaint the operating personnel with the changes or modifications.

B. Contractor shall videotape, both visual and audio, instruction to Owner's personnel on the maintenance and operation of the plumbing equipment and systems.

C. Submit certification, signed by Owner's agent that instructions have been completed and the videotape has been reviewed and delivered to the Owner.

D. Printed operating instructions and a copy of wiring diagrams are to be mounted in all equipment areas, framed and behind glass or encased in plastic. Printed operating instructions shall include steps for starting up and securing equipment. As a precedent to final acceptance four (4) copies of instructions are to be submitted to the Architect for review. Contractor shall turn over to Owner in a neat brochure form, equipment - guarantee, and maintenance instructions.

3.06 CLEANING

A. Cleaning shall be done as the work proceeds. Periodically remove waste and debris to keep the site as clean as is practical.

B. Refer the Division 01 for general requirements for cleaning.

C. Leave exposed parts of the plumbing work in a neat and clean condition, with painted surfaces unblemished and plated metal surfaces polished.

D. Thoroughly clean all materials, equipment, and appliances. Clean and prepare all surfaces to be painted. Clean the entire premises of unused materials, debris, spots, and marks to the satisfaction of the Architect.

E. Remove, thoroughly clean, and replace all strainers and valves after the system has been put in operation until system is clear of all foreign matter and repeat this operation after ten (10) days and again after the system has been in operation thirty (30) days. Submit certification that this operation has been completed.

3.07 SAFETY REQUIREMENTS

A. Enclose and guard belts, pulleys, chains, gears, couplings, projecting setscrews, keys, and other rotating parts in accordance with OSHA requirements. Insulate, guard, and cover any high-temperature equipment and piping so located as to endanger personnel or create a fire hazard.

END OF SECTION 22 0511

SECTION 22 0512

PLUMBING PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements for handling requests made after award of the Contract for substitutions of products specified in Division 22.

1.02 RELATED SECTIONS

A. Procedure for Contractor's construction Schedule and the Schedule of Submittals are included under Division 01.

B. Standards: Refer to Division 01 for applicability of industry standards to products specified.

C. Procedural requirements governing the Contractor's selection of products and product options are included under Division 01.

D. Refer to Division 01 for Products and Substitutions.

E. Refer to Sections 22 0500 & 22 0511 for additional requirements.

1.03 DEFINITIONS

A. "Products" is defined to include purchased items for incorporation into the work, regardless of whether specifically purchased for project or taken from Contractor's stock of previously purchased products. "Materials" is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work.

B. "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, etc.). Definitions in this paragraph are not intended to negate the meaning of other terms used in contract documents, including "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction", and similar terms, which are self-explanatory and have recognized meanings in the construction industry.

1.04 SUBSTITUTIONS

A. The requirements for substitutions do not apply to specified Contractor options on products and construction methods. Revisions to contract documents, where requested by Owner, Architect or Engineer, are "changes" not "substitutions". Substitutions requested during bidding period, which have been accepted prior to Contract Date, are included in contract document and are not subject to requirements for substitutions as specified herein. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities do not constitute "substitutions"; and do not constitute a basis for change orders, except as provided for in contract documents. Otherwise, contractor's requests of changes in products, materials and methods of construction required by contract documents are considered requests for "substitutions" and are subject to requirements hereof.

B. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect, otherwise requests will be returned without action except to record noncompliance with these requirements.
   1. Extensive revisions to Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of Contract Documents.
   3. The request is directly related to an "or approved equal" clause or similar language in the Contract Documents.
   4. All costs required to make all necessary revisions and modifications to the contract documents resulting from the substitution, including but not limited to, all professional fees and the cost of DSA approval will be the Contractor’s responsibility.
   5. All costs required to make all necessary revisions and modifications to the building structure, electrical and all other related construction costs resulting from the substitution, including but not limited to, material, products, equipment, testing, and inspection will bethe Contractor’s responsibility.
   6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
   7. Contractor will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.
   8. Contractor certifies that the substitution is not heavier than the specified item and does not necessitate any structural and electrical redesign; will fit within the room or area designed for the specified item; and will not exceed any maximum dimensions specified or shown on the original contract Documents. All roof mounted equipment must be less than or equal to the maximum height dimension from the finished roof as shown on the drawings.
   9. Contractor represents that he has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified.
   10. Contractor represents that he will provide the same warranty for the substitution that he would for that specified.

1.05 SUBMITTALS

A. Requests for Substitutions: Any request for substitution shall follow the guidelines of Substitution Requirements in Division 01, Section 220500 & 220511.

B. Substitution Warranty: All submittals of Request for Substitutions under the General and Supplementary Conditions of this Section shall be accompanied by a completely executed (filled out) and signed Substitution Warranty in the form entitled "Substitution Warranty", bound herein. Substitutions will not be accepted without the Substitution Warranty. In addition to other requirements, Contractor shall warrant in writing on his own letterhead that substituted materials shall perform as specified, and assume complete responsibility for same, including responsibility and costs required for modifications to building or other materials or equipment, and any additional coordination with work of other trades. Testing, if required, shall be paid by Contractor.

C. Responsibility of Contractor: The contractor shall be solely and directly responsible for fitting accepted substitute material and equipment into the available space in a manner acceptable to the Architect, and for the proper operation of the substituted equipment with all other equipment with which it may be associated. The Contractor shall bear all costs of meeting the above requirements for presenting a proposed substitution, and if the substitution is accepted, he must bear all costs involved.

D. Submit the following as part of the Request for Substitutions:
   1. Data showing proposed equipment is "equal" to that specified and is fully equipped, fits the space allotted and has physical configuration and weight similar-to the equipment specified in detail.

2. A complete layout, where applicable, of equipment room or area must be submitted for equipment proposed in "Request for Substitution". Submittal shall conform to requirements of Division 01 and Section 22 0500 "Common Work Results for Plumbing" as it applies to "Coordination Drawings."
3. Seismic Restraint: Where seismic restraint is required for products or equipment as specified, methods of seismic restraint signed by licensed Structural Engineer registered in the State of California, shall be submitted for review to the Division of the State Architect.

1.06 ARCHITECT'S ACTION

A. The Architect may request additional information or documentation necessary for evaluation of the request. Requests, by the Architect, for additional information or documentation will be in accordance with Division 01 requirements. The Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, Contractor shall use the “Basis of Design” product specified by name in the contract documents. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

A. Substitutions shall conform to the product requirements for the specified products or equipment.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 22 0512

SAMPLE

S U B S T I T U T I O N S W A R R A N T Y

In addition to other requirements, Contractor shall warrant in writing that substituted materials shall perform as specified, and assume complete responsibility for same, including responsibility and costs required for modifications to building or other materials or equipment, and any additional coordination with work of other trades. Testing, if required, shall be paid by contractor. The following is an example of the type Substitution Warranty which shall be executed by the Contractor, on his own letterhead:

SUBSTITUTION WARRANTY

We propose to provide

_____
(Describe items being proposed for substitution)

for_____ in lieu of
(List project name)

as indicated on the drawings and described in Section _____ of the Specifications.

We agree to assume the cost of any, and all modifications to the Contract Documents and to other portions of the work as indicated in the Specification Sections 22 0500, 22 0511, & 22 0512, and as necessary to accommodate for substituted material(s) and system(s) as indicated in this letter of "Substitution Warranty."

We hereby warrant that _____
(Provide Description)

is the equivalent of _____
(Specified Product)

in every respect and will perform satisfactorily under the conditions and use indicated on the Drawings and described in the Specifications.

Signed: _____ Date: _____
(Manufacturer/Supplier)

Signed: _____ Date: _____
(Subcontractor)

Signed: _____ Date: _____
(Contractor)

NOTE: Affix Corporate Seal over Signatures.

SECTION 22 0513

COMMON MOTOR REQUIREMENTS FOR PLUMBING EQUIPMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies the basic requirements for electrical components, which are an integral part of packaged Plumbingequipment. These components include, but are not limited to factory-installed motors, starters, and disconnect switches furnished as an integral part of packaged Plumbing equipment.

B. Specific electrical requirements (i.e., horsepower and electrical characteristics) for Plumbing equipment are scheduled on Drawings.

C. All motors, power driven equipment and automatic control equipment, except motor starters as hereinafter set forth required and connected with the work of this section of the specifications are to be furnished and installed under Division 22.

D. Control low (24V) and control line (120V) voltage wiring, conduit and related switches and relays required for the automatic control and/or interlock of motors and equipment includes final connection, are to be furnished and installed under Division 22. Materials and installation to conform to Class 1 or 2, CAC Title 24, Article E725, and as restricted under Division 26 of these specifications.

E. Power wiring, conduit, outlets, disconnect switches, motor starters and motor-rated contactors, and making of final connections, except as hereinafter specified, are to be furnished and installed under the Division 26 of these Specification.

F. All power supply wiring for providing a power source to, control valves, control transformers, etc., shall be furnished and installed under Division 22.

G. Identify circuits and equipment as outlined in the Electrical Sections of these Specifications.

H. Space provisions have been made on electrical panels for control power source.

1.02 RELATED SECTIONS

A. Separate electrical components and materials required for field installation and electrical connections are specified in Division 26.

B. This section applies to all Division 22 sections specifying packaged Plumbing equipment.

1.03 REFERENCES

A. NEMA Standards MG 1: Motors and Generators.

B. NEMA Standards ICS 2: Industrial Control Devices, Controllers, and Assemblies.

C. NEMA Standard 250: Enclosures for Electrical Equipment.

D. NEMA Standard KS 1: Enclosed Switches.

E. Comply with National Electrical Code (NFPA 70).

1.04 SUBMITTALS

A. No separate submittal is required. Submit product data for motors, starters, and other electrical components with submittal data required for the equipment for which it serves, as required by the individual equipment specification sections.

1.05 QUALITY ASSURANCE

A. Electrical components and materials shall be UL labeled.

PART 2 - PRODUCTS

2.01 MOTORS

A. Provide all motors necessary for equipment under the Plumbing Work. See Electrical Drawings for voltage and phase of electrical services.

B. The following are basis requirements for simple or common motors. For special motors, more detailed and specific requirements are specified in the individual equipment specifications.
   1. Torque characteristics shall be sufficient to satisfactorily accelerate the driven loads.
   2. Motor sizes shall be large enough so that the driven load will not require the motor to operate in the service factor range.
   3. 2-speed motors shall have 2 separate windings on poly-phase motors.
   4. Temperature Rating: As a minimum motors shall be rated for 40 degree C. environment with maximum 50 degree C temperature rise for continuous duty at full load (Class A Insulation).
   5. Starting capability: Frequency of starts as indicated by automatic control system, and not less than 5 evenly time spaced starts per hour for manually controlled motors.
   6. Service Factor: 1.22 for poly-phase motors and 1.35 for single-phase motors.
   7. Motor construction: NEMA Standard MG 1, general purpose, continuous duty, Deign "B", except "C" where required for high starting torque.
      a. Frames: NEMA Standard No. 48 or 54; use driven equipment manufacturer's standards to suit specific application.
      b. Bearings:
         1) Ball or roller bearings with inner and outer shaft seals.
         2) Re-greasable bearings, except permanently sealed where motor is normally inaccessible for regular maintenance.
         3) Bearings designed to resist thrust loading where belt drives or other drives produce lateral or axial thrust in motor.
         4) Bearings for fractional horsepower, light duty motors, sleeve type bearings are permitted.
      c. Enclosure Type:
         1) Open drip-proof motors for indoor use where satisfactorily housed or remotely located during operation.
         2) Guarded drip-proof motors where exposed to contact by employees or building occupants.
         3) Weather protected Type I for outdoor use, Type II where not housed (Epoxy encapsulated or TEFC).
      d. Overload protection: Polyphase built-in thermal overload protection and, where indicated, internal sensing device suitable for signaling and stopping motor at starter. Single phase, provide thermal overload protection.
      e. Noise rating: "Quiet."

f. Efficiencies shall be guaranteed minimum values in accordance with the following tabulation. Efficiencies shall be established in accordance with NEMA Test Standards MG1-12.53A using IEEE Test Procedure 112, Method B:

HP	EFFICIENCY
1 - 2	81.5
3 – 5	86.5
7-1/2 - 10	90.6
15 - 30	92.0

g. Nameplate: Indicate the full identification of manufacturer, ratings, characteristics, construction, special features and similar information.
h. Provide all motors with junction boxes or terminals boxes and provide adjustable slide rails for all motors with belt drives.
i. Motors rated 1 HP and larger shall have shaft, bearings and etc. capable of operating with multiple grooved sheaves and two or more belts.
j. V Type Belt Drives: Drives requiring not more than 2 belts; variable pitch type; size for mid-point of operating range. Drives requiring 3 or more belts; nonadjustable constant speed type. Provide belts in matched sets.

2.02 MOTOR STARTERS

A. Unless provided as part of packaged Plumbing equipment or otherwise indicated, starters for motors will be provided under Division 26. Provide to Division 26 the data necessary for motor starter heater sizing for all motors.

B. Starters for factory packaged Plumbing equipment specified under Division 22 shall be provided as part of the package.

C. Motor Starter Characteristics:
1. Enclosures: NEMA 1, general purpose enclosures with padlock ears, except in wet locations shall be NEMA 3R with conduit hubs, or units in hazardous locations, which shall have NEC proper class and division.
2. Type and size of starter shall be as recommended by motor manufacturer and the driven equipment manufacturer for applicable protection and start-up condition.

D. Manual switches shall have:
1. Pilot lights and extra positions for multi-speed motors.
2. Overload protection: melting alloy type thermal overload relays.

E. Magnetic Starters:
1. Maintained contact push buttons and pilot lights, properly arranged for single speed or multi-speed operation as indicated.
2. Trip-free thermal overload relays, each phase.
3. Interlocks, switches and similar devices as required for coordination with control requirements of Division 25 Controls section.
4. Built-in control circuit transformer, fused from line side, where service exceeds 240 volts.
5. Externally operated manual reset.
6. Under-voltage release or protection.

F. Motor Connections:
1. Flexible conduit, except where plug-in electrical cords are specifically indicated.

2.03 DISCONNECT SWITCHES

A. When applied as part of factory furnished and mounted equipment, disconnects shall meet the requirements for disconnect switches set forth in Division 26.

PART 3 - EXECUTION

3.01 SEISMIC RESTRAINT

A. All electrical devices shall be seismically restrained.

END OF SECTION 22 0513

SECTION 22 0514

SELECTIVE PLUMBING DEMOLITION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section includes limited scope of selective Plumbing demolition work as follows:
   1. Nondestructive removal of materials and equipment for reuse or salvage as indicated.
   2. Dismantling Plumbing fixtures, materials and equipment made obsolete by these installations.

1.02 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 01 and Division 22 Specification Sections.

B. Schedules indicating proposed methods and sequence of operations for selective demolition prior to commencement of Work. Include coordination for shut-off of utility services and details for dust and noise control.
   1. Coordinate sequencing and Owner occupancy specified in Division 01.
   2. Coordinate other selective demolition work as outlined in Division 01.

1.03 PROJECT CONDITIONS

A. Conditions Affecting Selective Demolition: The following project conditions apply:
   1. Protect adjacentmaterials indicated to remain. Install and maintain dust and noise barriers to keep dirt, dust, and noise from being transmitted to adjacent areas. Remove protection and barriers after demolition operations are complete.
   2. Locate, identify, and protect plumbing services passing through demolition area and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services for affected areas. Provide minimum of 72-hour notice to Owner prior to utility interruption.

1.04 SEQUENCE AND SCHEDULING

A. Coordinate the shut-off and disconnection of utility services with the Owner and the utility company.

B. Notify the Architect at least 7 days prior to commencing demolition operations.

C. Perform demolition in phases as indicated.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas where selective demolition is to occur. Determine extent of work and affect on existing conditions to remain. Advise Architect of any conditions that might create extensive alterations beyond indicated scope.

3.02 SELECTIVE DEMOLITION

A. General: Demolish, remove, demount, and disconnect abandoned Plumbing fixtures, materials and equipment indicated to be removed and not indicated to be salvaged or saved.

B. Materials and Equipment to Be Salvaged: Remove, demount, and disconnect existing Plumbing fixtures, materials and equipment indicated to be removed and salvaged, and deliver materials and equipment to the location designated for storage.
   1. Protect all removed and salvaged equipment from being damaged during the demolition work.

C. Disposal and Cleanup: Remove from the site and legally dispose of demolished materials and equipment not indicated to be salvaged.

D. Plumbing Materials and Equipment: Demolish, remove, demount, and disconnect the following items:
   1. Inactive and obsolete, piping, fittings and specialties, equipment, controls, fixtures, and insulation.
      a. Obtain written approval form Architect and owner for piping embedded in floors, walls, and ceilings which may remain, if such materials do not interfere with new installations.
         1) Drain and cap piping allowed to remain.
      b. Remove materials above accessible ceilings.
   2. Perform cutting and patching required for demolition.

END OF SECTION 22 0514

SECTION 22 0523

VALVES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section includes general duty valves common to most mechanical piping systems.
   1. Special purpose valves are specified in individual piping system specifications.

1.02 RELATED SECTIONS

A. Division 22 Section "Plumbing Identification" for valve tags and charts.

1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract, Division 01 Specification Sections, and Section 22 0500 "Common Work Results for Plumbing."
   1. Product data, including body material, valve design, pressure and temperature classification, end connection details, seating materials, trim material and arrangement, dimensions and required clearances, and installation instructions.
   2. Provide valve schedule showing manufacturer's figure number and sizes.

1.04 QUALITY ASSURANCE

A. Single Source Responsibility: Comply with the requirements specified in Division 01 Section "Materials and Equipment," under "Source Limitations."

B. American Society of Mechanical Engineers (ASME) Compliance: Comply with ASME B31.9 for building services piping and ASME B31.1 for power piping.

C. Manufacturers Standardization Society of the Valve and Fittings Industry (MSS) Compliance): Comply with the various MSS Standard Practices referenced.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Preparation For Transport: Prepare valves for shipping as follows:
   1. Ensure valves are dry and internally protected against rust and corrosion.
   2. Protect valve ends against damage to threads, flange faces, and weld-end preps.
   3. Set valves in best position for handling. Set globe and gate valves closed to prevent ratting; set ball and plug valves open to minimize exposure of functional surfaces; and block swing check valves in either closed or open position.

B. Storage: Use the following precautions during storage:
   1. Do not remove valve end protectors unless necessary for inspection; then reinstall for storage.
   2. Protect valves from weather. Store valves indoors. Maintain valve temperature higher than the ambient dew point temperature. If outdoor storage is necessary, support valves off the ground or pavement in watertight enclosures.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products from one of the manufacturers listed in valve schedule.

2.02 VALVE FEATURES, GENERAL

A. Valve Design: Rising stem or rising outside screw and yoke stems.
   1. Non-rising stem valves may be used where headroom prevents full extension of rising stems.

B. Pressure and Temperature Ratings: As scheduled and required to suit system pressures and temperatures.

C. Sizes: Same size as upstream pipe, unless otherwise indicated.

D. Operators: Provide the following special operator features:
   1. Hand wheels, fastened to valve stem, for valves other than quarter turn.
   2. Lever handles, on quarter-turn valves 6-inch and smaller, except for plug valves. Provide plug valves with square heads; provide one wrench for every 10 plug valves.
   3. Chain-wheel operators, for valves 2-1/2 inch and larger, install 72 inches or higher above finished floor elevation. Extend chains to an elevation of 5'-0" above finished floor elevation.
   4. Gear drive operators, on quarter-turn valves 8-inch and larger.

E. Extended Stems: Where insulation is indicated or specified, provide extended stems arranged to receive insulation.

F. End Connections: As indicated in the valve specifications.
   1. Threads: Comply with ANSI B1.20.1.
   2. Flanges: Comply with ANSI B16.1 for cast iron, ANSI B16.5 for steel, and ANSI B16.24 for bronze valves.
   3. Solder-Joint: Comply with ANSI B16.18.
      a. Caution: Where soldered end connections are used, use solder having a melting point below 840 deg. F for gate, globe, and check valves; below 421 deg. F for ball valves.

2.03 GATE VALVES

A. Gate Valves, 2-Inch and Smaller: MSS SP-80; Class 150, body and union bonnet of ASTM B62 cast bronze; with threaded or solder ends, solid disc, copper-silicon alloy stem, brass packing gland, "Teflon" impregnated packing, and malleable iron hand wheel. Do not use solder end valves for hot water heating or steam piping applications.

MANUFACTURER	THREADED NRS	THREADED RS	SOLDER NRS	SOLDER RS
Crane	X	431UB	X	X
Grinnell	3050	3060	X	X
Milwaukee	1141	1151	X	1169
Nibco	T-136	T-135	S-136	X
KITZ	x	42	x	43

"x" means not available. Provide lead-free products.

B. Gate Valves, 2-1/2 Inch and Larger: MSS SP-70; Class 125 iron body, bronze mounted, with body and bonnet conforming to ASTM A126 class B; with flanged ends, "Teflon" impregnated packing, and two-piece backing gland assembly.

MANUFACTURER	OS & Y RS	NRS
Crane	465-1/2	461
Grinnell	6020A	6060A
Nibco	617-O	F-619
Milwaukee	F-2885	F-2882
KITZ	72	75

"x" means not available. Provide lead-free products.

2.04 BALL VALVES

A. Ball Valves, 2 Inches and Smaller: Rated for 150 psi saturated stem pressure, 400 psi WOG pressure; two- or three-piece construction; with bronze body conforming to ASTM B 62, full port only, chrome-plated brass ball, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, and vinyl covered steel handle. Provide solder ends for condenser water, chilled water, and domestic hot and cold water service; threaded ends for heating hot water and low-pressure steam.

1. Ball Valves - 1 Inch and Smaller:

MANUFACTURER	THREADED ENDS	SOLDER ENDS
Crane	9302	9322
Nibco	T-580-70	S-580-70
Watts	B-6000	B-6001
Milwaukee	BA-100	BA-150
KITZ	58	59

"x" means not available. Provide lead-free products.

2. Ball Valves - 1-1/4 Inch to 2 Inch:

MANUFACTURER	THREADED ENDS	SOLDER ENDS
Nibco	T-590-Y	S-590-Y
Stockham	S-216 BR-R-T	S-216-BR-R-S
Watts	B-6800	B-6801
KITZ	62	63

"x" means not available. Provide lead-free products.Grooved Ends:

Victaulic Style 721.

2.05 PLUG VALVES

A. Plug Valves, 2-Inch and Smaller: Rated at 150 psi WOG; bronze body, with straightaway pattern, square head, and threaded ends.
1. Lunkenheimer: 454 or equal.
2. Homestead: 611 (Semi Steel Body) or equal.

B. Plug Valves, 2-1/2 Inch and Larger: MSS SP-78; rated at 175 psi WOG; lubricated plug type, with semi steel body, single gland, wrench operated and flanged ends.
1. Powell: 2201 or equal.
2. Homestead: 605 or equal.

2.06 CHECK VALVES

A. Swing Check Valves, 2-Inch and Smaller: MSS SP-80; Class 125, cast-bronze body and cap conforming to ASTM B 62; with horizontal swing, Y-pattern, and bronze disc; and having threaded or solder ends. Provide valves capable of being reground while the valve remains in the line. Provide Class 150 valves meeting the above specifications, with threaded end connections, where system pressure requires or where Class 125 valves are not available.

MANUFACTURER	CLASS 125THREADED ENDS	CLASS 125SOLDER ENDS	CLASS 125THREADED ENDS
Crane	37	1342	137
Milwaukee	509	1509	510
Nibco	T-413	S-413	T-433
KITZ	22	23	29

Grooved Ends: Victaulic Series 712. Provide lead-free products.

B. Swing Check Valves, 2-1/2 Inch and Larger: MSS SP-71; Class 125 (Class 175 FM approved for fire protection piping systems), cast iron body and bolted cap conforming to ASTM A 126, Class B; horizontal wing, and bronze disc or cast-iron disc with bronze disc ring; and flanged ends. Provide valves capable of being refitted while the valve remains in the line.

MANUFACTURER	CLASS 125	CLASS 175
Crane	373	x
Milwaukee	F2974	x
Nibco	F-918	x
KITZ	78	x

“x” means not available. Provide lead-free products.

C. Lift Check Valves, 2-Inch and Smaller: Class 125; cast-bronze body and cap conforming to ASTM B 62; horizontal or angle pattern, lift-type valve, with stainless steel spring, bronze disc holder with renewable "Teflon" disc, and threaded ends. Provide valves capable of being refitted and ground while the valve remains in the line.

MANUFACTURER	HORIZONTAL	ANGLE
Jenkins	655-A	x
Lunkenheimer	233	x

“x” means not available. Provide lead-free products.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine valve interior through the end ports for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks used to prevent disc movement during shipping and handling.

B. Actuate valve through an open-close and close-open cycle. Examine functionally significant features, such as guides and seats made accessible by such actuation. Following examination, return the valve closure member to the shipping position.

C. Examine threads on both the valve and the mating pipe for form (i.e., out-of-round or local indentation) and cleanliness.

D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Check gasket material for proper size, material composition suitable for service, and freedom from defects and damage.

E. Prior to valve installation, examine the piping for cleanliness, freedom from foreign materials, and proper alignment.

F. Replace defective valves with new valves.

3.02 VALVE ENDS SELECTION

A. Select valves with the following ends or types of pipe/tube connections:
   1. Copper Tube Size, 2-Inch and Smaller: Solder ends, except provide threaded ends for heating hot water and low-pressure steam service.
   2. Steel Pipe Sizes, 2-Inch and Smaller: threaded or grooved end.
   3. Steel Pipe Sizes 2-1/2 Inch and Larger: grooved end or flanged.

3.03 VALVE INSTALLATIONS

A. General Application: Refer to piping system specification sections for specific valve applications and arrangements. Use gate, ball, and butterfly valves for shut-off duty. Use globe, plug, and ball valves for throttling duty.

B. Locate valves for easy access and provide separate support where necessary. Where concealed, install behind access panel with valve located for complete accessibility for servicing.

C. Install valves and unions for each fixture and item of equipment. Arrange valves to allow equipment removal without system shutdown. Unions are not required on flanged devices.

D. Install three-valve bypass around each pressure reducing valve using throttling-type valves.

E. Install valves in horizontal piping with stem at or above the center of the pipe.

F. Install valves in a position to allow full stem movement.

G. Installation of Check Valves: Install for proper direction of flow as follows:
   1. Swing Check Valves: Horizontal position with hinge pin level.
   2. Lift Check Valve: With stem upright and plumb.

H. Where shut-off valves are installed in a confined space such as in a wall or furring, install ball valves with operating handle parallel with face of wall.

I. Where valves are located in walls, do not install more than 6'-0" from finished floor. Where valves are located above ceilings, install centered on access point and not greater than 24" above access point.

3.04 SOLDER CONNECTIONS

A. Cut tube square and to exact lengths.

B. Clean end of tube to depth of valve socket with steel wool, sand cloth, or a steel wire brush to a bright finish. Clean valve socket in same manner.

C. Apply proper soldering flux in an even coat to inside of valve socket and outside of tube.

D. Open gate and glove valves to full-open position.

E. Remove the cap and disc holder of swing check valves having composition discs.

F. Insert tube into valve socket, making sure the end rests against the shoulder inside valve. Rotate tube or valve slightly to ensure even distribution of the flux.

G. Apply heat evenly to outside of valve around joint until solder will melt upon contact. Feed solder until it completely fills the joint around tube. Avoid hot spots or overheating valve. Once the solder starts cooling, remove excess amounts around the joint with a cloth or brush.

H. Use 95-5 tin/antimony lead-free solder for all solder joints unless indicated otherwise.

3.05 THREADED CONNECTIONS

A. Note the internal length of threads in valve ends, and proximity of valve internal seat or wall, to determine how far pipe should be threaded into valve.

B. Align threads at point of assembly.

C. Apply appropriate tape or thread compound to the external pipe threads (except where dry seal threading is specified).

D. Assemble joint, wrench tight. Wrench on valve shall be on the valve end into which the pipe is being threaded.

3.06 FLANGED CONNECTIONS

A. Align flange surfaces parallel.

B. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly with a torque wrench.

3.07 FIELD QUALITY CONTROL

A. Tests: After piping systems have been tested and put into service, but before final adjusting and balancing, inspect valves for leaks. Adjust or replace packing to stop leaks; replace valves if leak persists.

3.08 ADJUSTING AND CLEANING

A. Cleaning: Clean mill scale, grease, and protective coatings from exterior of valves and prepare valves to receive finish painting or insulation.

3.09 VALVE PRESSURE/TEMPERATURE CLASSIFICATION SCHEDULES

A. Below schedules are for standard installation conditions. Variations or special valves and/or conditions set forth in other Division 15 Sections shall take precedence.

1. VALVES, 2-INCH AND SMALLER

SERVICE	GATE	GLOBE	BALL	CHECK
Condenser Water	125	125	150	125
Chilled Water	125	125	150	125
Domestic Hot and Cold Water	125	125	150	125
Heating Hot Water	150	150	150	150
Low-Pressure Steam	150	150	150	150

2. VALVES, 2-1/2 INCH AND LARGER

SERVICE	GATE	GLOBE	BUTTERFLY	CHECK
Condenser	125	125	200	125
Chilled Water	125	125	200	125
Domestic Hot and Cold Water	125	125	200	125
Heating Hot Water	125	125	200	125
Low-Pressure Steam	125	125	200	125

END OF SECTION 22 0523

SECTION 22 0553

PLUMBING IDENTIFICATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Extent of Plumbing identification work required by this section is indicated on drawings or specified in other Division 22 sections, and includes the following:
   1. Painted Identification Materials.
   2. Plastic Pipe Markers.
   3. Plastic Tape.
   4. Underground-Type Plastic Line Marker.
   5. Plastic Duct Markers.
   6. Valve Tags.
   7. Diagram and Schedule Frames.
   8. Engraved Plastic-Laminate Signs.
   9. Plastic Equipment Markers.
   10. Plasticized Tags.

1.02 RELATED SECTIONS

A. This section is part of each Division 22 section making reference to identification devices specified herein.

B. Plumbing identification furnished as part of factory-fabricated equipment is specified as part of equipment assembly in other Division 22 sections.

C. Refer to Division 26 Sections for identification requirements of electrical work; not work of this section.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for each identification material and device required.

B. Samples: Submit samples of each color, lettering style and other graphic representation required for each identification material or system.

C. Schedules and Diagrams:
   1. Submit valve schedule for each piping system, typewritten and reproduced on 8-1/2" x 11" bond paper. Tabulate valve number, piping system, system abbreviation (as shown on tag), location of valve (room or space), and variations for identification (if any). Mark valves which are intended for emergency shut-off and similar special uses, by special "flags", in margin of schedule.
   2. Submit temperature control diagrams and Sequence of Operation on bond paper suitable for framing.

D. Maintenance Data: Include product data and schedules in maintenance manuals; in accordance with requirements of Division 01 and Division 22 Section 220511 "Supplementary Plumbing Requirements."

1.04 QUALITY ASSURANCE

A. Codes and Standards:
   1. ANSI Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.
   2. No adhesive type identification markers will be accepted. All markers and tags shall be permanently attached to pipe, etc.
   3. All identification markers installed exterior of buildings shall be ultra-violet resistant.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide Plumbingidentification materials of one of the following:
   1. Seton Name Plate Corp.
   2. Allen Systems, Inc.
   3. Brady (W.H.) Co.; Signmark Div.
   4. Industrial Safety Supply Co., Inc.

2.02 PLUMBING IDENTIFICATION MATERIALS

A. General: Provide manufacturer's standard products of categories and types required for each application as referenced in other Division 22 sections. Where more than single type is specified for application, selections is Installer’s option, but provide single selection for each product category.

2.03 PLASTIC PIPE MARKERS

A. Snap-On Type: Provide manufacturer's standard pre-printed, semi-rigid snap-on, color-coded pipe markers, complying with ANSI A13.1.

B. Insulation: Furnish 1" thick molded fiberglass insulation with jacket for each plastic pipe marker to be installed on uninsulated pipes subject to fluid temperatures of 125oF (52oC) or greater. Cut length to extend 2" beyond each end of plastic pipe marker.

C. Small Pipes: For external diameters less than 6" (including insulation if any), provide full-band pipe markers, extending 360 degrees around pipe at each location, fastened by one of the following methods:
   1. Snap-on application of pre-tensioned semi-rigid plastic pipe marker.
   2. Laminated or bonded application of pipe marker to pipe (or insulation).
   3. Taped to pipe (or insulation) with color-coded plastic adhesive tape, not less than 3/4" wide; full circle at both ends of pipe marker, tape lapped 1-1/2".

D. Large Pipes: For external diameters of 6" and larger (including insulation if any), provide either full-band or strip-type pipe markers, but not narrower than 3 times letter height (and of required length), fastened by one of the following methods:
   1. Laminated or bonded application of pipe marker to pipe (or insulation).
   2. Taped to pipe (or insulation) with color-coded plastic adhesive tape, not less than 1-1/2" wide; full circle at both ends of pipe marker, taped lapped 3".
   3. Strapped-to-pipe (or insulation) application of semi-rigid type, with manufacturer's standard stainless-steel bands.

E. Lettering: Manufacturer's standard pre-printed nomenclature which best describes piping system in each instance, as selected by Architect/Engineer in cases of variance with names as shown or specified.
   1. Arrows: Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as a separate unit of plastic.

2.04 PLASTIC TAPE

A. General: Provide manufacturer's standard color-coded pressure-sensitive (self-adhesive) vinyl tape, not less than 3 mils thick.

B. Width: Provide 1-1/2" wide tape markers on pipes with outside diameters (including insulation, if any) of less than 6", 2-1/2" wide tape for larger pipes.

C. Color: Comply with ANSI A13.1, except where another color selection is indicated.

2.05 UNDERGROUND TYPE PLASTIC LINE MARKER

A. General: Manufacturer's standard permanent, bright-colored, continuous-printed plastic tape, intended for direct-burial service; not less than 6" wide x 4 mils thick. Provide tape with printing which most accurately indicates the type of service of buried pipe.
   1. Provide multi-ply tape consisting of solid aluminum foil core between 2-layers of plastic tape.

2.06 VALVE TAGS

A. Brass Valve Tags: Provide 19-gage polished brass valve tags with stamped-engraved piping system abbreviation in 1/4" high letters and sequenced valve numbers 1/2" high, and with 5/32" hole for fastener.
   1. Provide 1-1/2" diameter tags, except as otherwise indicated.
   2. Fill tag engraving with black enamel.

B. Valve Tag Fasteners: Provide manufacturer's standard solid brass chain (wire link or beaded type), or solid brass S-hooks of the sizes required for proper attachment of tags to valves, and manufactured specifically for that purpose.

C. Access panel markers: Provide manufacturer's standard solid brass chain (wire link or beaded type), or solid brass S-hooks of the sizes required for proper attachment of tags to valves, and manufactured specifically for that purpose.

D. Access Panel Markers: Provide manufacturer's standard 1/16" thick engraved plastic laminate access panel markers, with abbreviations and numbers corresponding to concealed valve. Include 1/8" center hole to allow attachment.

2.07 DIAGRAM AND SCHEDULE FRAMES

A. General: For each page of schedule and/or diagrams, provide glazed display frame, with screws for removable mounting on masonry walls. Provide frames of finished hardwood or extruded aluminum, with SSB-grade sheet glass.

2.08 ENGRAVED PLASTIC LAMINATE SIGNS

A. General: Provide engraving stock melamine plastic laminate, complying with FS L-P-387, in the sizes and thicknesses indicated, engraved with engraver's standard letter style of the sizes and wording indicated, white with black core (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

B. Thickness: 1/16" for units up to 20 sq. in. or 8" length; 1/8" for larger units.

C. Fasteners: Self-tapping stainless-steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.

2.09 LETTERING AND GRAPHICS

A. General: Coordinate names, abbreviations and other designations used in Plumbing identification work, with corresponding designations shown, specified, or scheduled. Provide numbers, lettering and wording as indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of Plumbing systems and equipment.
   1. Multiple Systems: Where multiple systems of same generic name are shown and specified, provide identification which indicates individual system number as well as service (as examples; Boiler No. 3, Air Supply No. 1H, Standpipe F12).

2.10 EQUIPMENT MARKERS

A. Equipment Nameplates: Metal, with data engraved or stamped, for permanent attachment on equipment.
   1. Data:
      a. Manufacturer, product name, model number, and serial number.
      b. Capacity, operating and power characteristics, and essential data.
      c. Labels of tested compliances.
   2. Location: Accessible and visible.
   3. Fasteners: As required to mount on equipment.

B. Equipment Markers: Engraved, color-coded laminated plastic. Include contact-type, permanent adhesive.
   1. Terminology: Match schedules as closely as possible.
   2. Data.
   3. Name and plan number.
      a. Equipment service.
      b. Design capacity.
      c. Other design parameters such as pressure drop, entering and leaving conditions, and speed.
   4. Size: 2-1/2 by 4 inches for control devices, dampers, and valves; 4-1/2 by 6 inches for equipment.

C. Equipment Signs: ASTM D 709, Type I, cellulose, paper-base, phenolic-resin-laminate engraving stock; Grade ES-2, black surface, black phenolic core, with white melamine sub-core, unless otherwise indicated. Fabricate in sizes required for message. Provide holes for mechanical fastening.
   1. Data: Instructions for operation of equipment and for safety procedures.
   2. Engraving: Manufacturer's standard letter style, of sizes and with terms to match equipment identification.
   3. Retain and edit subparagraph above or first subparagraph below.
   4. Thickness: 1/16 inch for units up to 20 sq. in. or 8 inches in length, and 1/8 inch for larger units.

5. Fasteners: Self-tapping, stainless-steel screws or contact-type, permanent adhesive.

D. Access Panel and Door Markers: 1/16-inch thick, engraved laminated plastic, with abbreviated terms and numbers corresponding to identification. Provide 1/8-inch center hole for attachment.
   1. Fasteners: Self-tapping, stainless-steel screws or contact-type, permanent adhesive.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Coordination: Where identification is to be applied to surfaces which require insulation, painting or other covering or finishes, including valve tags in finished mechanical spaces, install identification after completion of covering and painting. Install identification prior to installation of acoustical ceilings and similar removable concealment.

3.02 PIPING SYSTEM IDENTIFICATION

A. General: Install pipe markers of one of the following types on each system indicated to receive identification, and include arrows to show normal direction of flow:
   1. Plastic pipe markers, with application system as indicated under "Materials" in this section. Install on pipe insulation segment where required for hot-non-insulated pipes.

B. Locate pipe markers as follows wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.
   1. Near each valve and control device.
   2. Near each branch, excluding short take-offs for fixtures and terminal units; mark each pipe at branch, where there could be question of flow pattern.
   3. Near locations where pipes pass through walls, floors ceilings, or enter non-accessible enclosures.
   4. At access doors, manholes similar access points which permit view of concealed piping.
   5. Near major equipment items and other points of origination and termination.
   6. Spaced intermediately at maximum spacing of 50' along each piping run, except reduce spacing to 25' in congested areas of piping and equipment.
   7. On piping above removable acoustical ceilings, except omit intermediately spaced markers.

3.03 UNDERGROUND PIPING IDENTIFICATION

A. General: During back-filling/top soiling of each exterior underground piping systems, except sanitary sewer and storm drainage install continuous underground-type plastic line marker, located directly over buried line at 6" to 8" below finished grade. Where multiple small lines are buried in common trench and do not exceed overall width of 16", install single line marker.

3.04 VALVE IDENTIFICATION

A. General: Provide valve tag on every valve, cock and control device in each piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibs, and shut-off valves at plumbing fixtures, and similar rough-in connections of end-use fixtures and units. List each tagged valve on valve schedule for each piping system.

B. Mount valve schedule frames and schedules in machine rooms, where indicated or, if not otherwise indicated, where directed by Architect/Engineer.

3.05 PLUMBING EQUIPMENT IDENTIFICATION

A. General: Install engraved plastic laminate sign or plastic equipment marker on or near each major item of plumbing equipment and each operational device, as specified herein if not otherwise specified for each item or device. Provide signs for the following general categories of equipment and operational devices:
   1. Fuel-burning units including water heaters, boilers, furnaces, heaters.
   2. Pumps, compressors, chillers, condensers and similar motor-driven units.
   3. Fans and blowers.

B. Lettering Size: Minimum 1/4" high lettering for name of unit where viewing distance is less than 2'-0", 1/2" high for distances up to 6'-0", and proportionately larger lettering for greater distances. Provide secondary lettering of 2/3 to 3/4 of size of the principal lettering.

C. Test of Signs: In addition to name of identified unit, provide lettering to distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.

3.06 ADJUSTING AND CLEANING

A. Adjusting: Relocate any Plumbing identification device which has become visually blocked by work of this division or other divisions.

B. Cleaning: Clean face of identification devices, and glass frames of valve charts.

END OF SECTION 22 0553

SECTION 22 0700

PLUMBING INSULATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Extent of plumbing insulation required by this section is indicated on drawings and schedules, and by requirements of this section, and includes the following:
   1. Piping Systems Insulation:
      a. Fiberglass.
      b. Calcium Silicate.
      c. Flexible Unicellular.
   2. Equipment Insulation:
      a. Fiberglass.
      b. Calcium Silicate.
      c. Flexible Unicellular.

1.02 RELATED SECTIONS

A. Refer to Division 22 Section "Supports and Anchors" for protection saddles, protection shields, and thermal hanger shields; not work of this section.

B. Refer to Division 22 Section "Plumbing Identification" for installation of identification devices for piping and equipment; not work of this section.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for each type of mechanical insulation. Submit schedule showing manufacturer's product number, K-value, thickness, and furnished accessories for each mechanical system requiring insulation.

B. Maintenance Data: Submit maintenance data and replacement material lists for each type of mechanical insulation. Include this data and product data in maintenance manual.

1.04 QUALITY ASSURANCE

A. Flame/Smoke Ratings: Provide composite mechanical insulation (insulation, jackets, coverings, sealers, mastics, and adhesives) with flame-spread index of 25 or less, and smoke-developed index of 50 or less, as tested by ASTM E 84 (NFPA 255) method.

B. As a minimum, insulation shall meet installed conductance as set forth in Title 24 California Code of Regulations (CCR) 2022 Building Energy Efficiency Standards or as indicated in contract documents, whichever is greater.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver insulation, coverings, cements, adhesives, and coatings to site in containers with manufacturer's stamp or label, affixed showing fire hazard indexes of products.

B. Protect insulation against dirt, water, and chemical and mechanical damage. Do not install damaged or wet insulation; remove from project site.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
   1. Owens-Corning Fiberglas Corp.
   2. Manville Products Corp.
   3. Armstrong World Industries, Inc.
   4. CertainTeed Corp.
   5. Knauf Fiber Glass GmbH.

2.02 PIPING INSULATION MATERIALS

A. Fiberglass (Mineral Fiber) Piping Insulation: ASTM C547, Class 1 unless otherwise indicated. Manville Products Corp. Micro-Lok, Owens-Corning Fiberglas Corp., ASJ/SL-II or equivalent.

B. Calcium Silicate Piping Insulation: ASTM C533, Type I. Owens-Corning Fiberglass Corp. "Kaylo Asbestos Free" or equivalent.

C. Flexible Unicellular Piping Insulation: ASTM C534, Type I. Armstrong World Industries, Inc., or equal meeting ASTM E-84 25/50 index.

D. Jackets for Piping Insulation: ASTM C921, Type I (Vapor Barrier) for piping with temperatures below ambient. (Type II (Water Vapor Permeable) for piping with temperatures above ambient. Type I may be used for all piping at Installer's option.
   1. Encase pipe fittings insulation with one-piece pre-molded PVC fitting covers, fastened as per manufacturer's recommendations. Zeston PVC Insulated fitting covers or equivalent.
   2. Encase exterior piping insulation with aluminum jacket with weather-proof construction.

E. Staples, Bands, Wires, and Cement: As recommended by insulation manufacturer for applications indicated.

F. Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications indicated.

G. All Insulation shall be U.L. listed showing flame spread not greater than 25, nor smoke greater than 50, per NFPA 90A.

2.03 EQUIPMENT INSULATION MATERIALS

A. Flexible Fiberglass Equipment Insulation: ASTM C553, Type II, Class F-1, Owens-Corning Fiberglass, Inc., Type 701 1.5 Lbs./Ft3.

B. Calcium Silicate Equipment Insulation: ASTM C533, Type I, Block; Owens/Corning Fiberglass, Inc., Kaylo Asbestos Free, U-Grooved block insulation.

C. Jacketing Material for Equipment Insulation: Provide canvas jacketing material, not less than 7.8 ounces per square yard, or metal jacket at Installer's option, except as otherwise indicated.

D. Equipment Insulation Compounds: Provide adhesives, cements, sealers, mastics, and protective finishes as recommended by insulation manufacturer for applications indicated.

E. Equipment Insulation Accessories: Provide staples, bands, wire, wire netting, tape corner angles, anchors and stud piping as recommended by insulation manufacturer for applications indicated.

F. All Insulation shall be U.L. listed showing flame spread not greater than 25, nor smoke greater than 50, per NFPA 90A.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine areas and conditions under which plumbing insulation is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.02 PLUMBING PIPING SYSTEM INSULATION

A. Insulation Omitted: Omit insulation on chrome-plated exposed piping (except for handicapped fixtures), air chambers, unions, strainers, check valves, balance cocks, flow regulators, drain lines from water coolers, drainage piping located in crawl spaces or tunnels, buried piping, fire protection piping, and pre- insulated equipment.

B. Cold Piping:
   1. Application requirements: Insulate the following cold plumbing piping systems:
      a. Potable chilled water piping.
      b. Plumbing drains carrying cold condensate.
   2. Insulate each piping system specified above with one of the following types and thicknesses of insulation:
      a. Fiberglass: 1" thickness.
      b. Flexible Unicellular: 1/2" thickness.

C. Hot Piping:
   1. Application Requirements: Insulate the following hot plumbing piping systems.
      a. Potable hot water piping.
      b. Potable hot water re-circulating piping.
      c. Hot drain piping (where indicated).
   2. Insulate each piping system specified above with one of the following types and thicknesses of insulation.
      a. Fiberglass: 1" thick for pipe sizes up to and including 6", 1-1/2" thick for pipe sizes over 6".

3.03 EQUIPMENT INSULATION

A. Cold Equipment (Below Ambient Temperature):
   1. Application requirements: Insulate the following cold equipment:
      a. Refrigeration equipment, including chillers, tanks and pumps.
      b. Drip pans under chilled equipment.
      c. Cold and chilled water pumps.
      d. Pneumatic water tanks.
   2. Insulate each item of equipment specified above with one of the following types and thicknesses of insulation:
      a. Fiberglass: 2" thick for cold surfaces above 35ºF. and 3" thick for surfaces 35ºF. and lower.

B. Hot Equipment (Above Ambient Temperature):
   1. Application Requirements: Insulate the following hot equipment:
      a. Boilers (not pre-insulated at factory).
      b. Water heaters.
      c. Hot water expansion tanks.

d. Hot water pumps.

2. Insulate each item of equipment specified above with one of the following types and thicknesses of insulation.
   a. Fiberglass: 2" thick, except 3" thick for low-pressure boilers and steam-jacketed heat exchangers.

C. Breeching and Stacks:
1. Application Requirements: Insulate the following breechings and stacks:
   a. Breechings between heating equipment outlet and stack or chimney connection, except for double wall or factory insulated breechings.

3.04 INSTALLATION OF PIPING INSULATION

A. General: Install insulation products in accordance with manufacturer's written instructions, and in accordance with recognized industry practices to ensure that insulation serves its intended purpose.

B. Install insulation on pipe systems, subsequent to installation of heat tracing, painting, testing, and acceptance of tests.

C. Install insulation materials with smooth and even surfaces. Insulated each continuous run of piping with full-length units of insulation, with a single cut piece to complete run. Do not use cut pieces or scraps abutting each other.

D. Clean and dry pipe surfaces prior to insulating. Butt insulation joints firmly together to ensure a complete and tight fit over surfaces to be covered.

E. Maintain integrity of vapor barrier jackets on pipe insulation and protect to prevent puncture or other damage.

F. Cover valves, fittings, and similar items in each piping system with equivalent thickness and composition of insulation as applied to adjoining pipe run. Install factory molded, precut or job fabricated units (at Installer's option) except where specific form or type is indicated.

G. Extend piping insulation without interruption through walls, floors, and similar piping penetrations, except where otherwise indicated.

H. Butt pipe insulation against pipe hanger insulation inserts. For hot pipes, apply 3" wide vapor barrier tape or band over the butt joints. For cold piping apply wet coat of vapor barrier lap cement on butt joints and seal joints with 3" wide vapor barrier tape or band.

3.05 INSTALLATION OF EQUIPMENT INSULATION

A. General: Install equipment thermal insulation products in accordance with manufacturer's written instructions, and in compliance with recognized industry practices to ensure that insulation serves intended purpose.

B. Install insulation materials with smooth and even surfaces and on clean and dry surfaces. Redo poorly fitted joints. Do not use mastic or joint sealer as filler for gaping joints and excessive voids resulting from poor workmanship.

C. Maintain integrity of vapor-barrier on equipment insulation and protect it to prevent puncture and other damage.

D. Do not apply insulation to equipment, breechings, or stacks while hot.

E. Apply insulation using the staggered joint method for both single and double-layer construction, where feasible. Apply each layer of insulation separately.

F. Coat insulated surfaces with layer of insulating cement, trowel in workmanlike manner, leaving a smooth continuous surface. Fill in scored block, seams, chipped edges and depressions, and cover over wire netting and joints with cement of sufficient thickness to remove surface irregularities.

G. Cover insulated surfaces with all-service jacketing neatly fitted and firmly secured. Lap seams at least 2". Apply over vapor barrier where applicable.

H. Do not insulate boiler manholes, hand-holes, cleanouts, ASME stamp, and manufacturer's nameplate. Provide neatly beveled edge at interruptions of insulation.

I. Provide removable insulation sections to cover parts of equipment which must be opened periodically for maintenance; include metal vessel covers, fasteners, flanges, frames, and accessories.

J. Equipment exposed to Weather: Protect outdoor insulation from weather by installation of weather-barrier mastic protective finish, or jacketing, as recommended by the manufacturer.

3.06 PROTECTION AND REPLACEMENT

A. Replace damaged insulation which cannot be repaired satisfactorily, including units with vapor barrier damage and moisture saturated units.

B. Protection: Insulation Installer shall advise Contractor of required protection for insulation work during remainder of construction period, to avoid damage and deterioration.

END OF SECTION 22 0700

SECTION 22 1100

PLUMBING PIPING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies piping materials and installation methods common to more than one section of Division 22 and includes joining materials, fire stop sealants, and basic piping installation instructions.

1.02 RELATED SECTIONS

A. The following sections contain requirements that relate to this section:
   1. Division 22 Section "Common Work Results for Plumbing" applies to the work of this Section.
   2. Piping materials and installation methods peculiar to individual systems are specified withintheir respective system specification sections of Division 02 and 22.
   3. Valves are specified in a separate section and in individual piping system sections of Division 22.
   4. Division 22 Section "Supports and Anchors."
   5. Division 22 Section "Plumbing Identification."

1.03 SUBMITTALS

A. Refer to Division 01 and Division 22 Section "Common Work Results for Plumbing" for administrative and procedural requirements for submittals.

B. Product Data: Submit product data on fire stop sealants.

1.04 QUALITY ASSURANCE

A. Welding procedures and testing shall comply with ANSI Standard B31.1.0 - Standard Code for Pressure Piping, Power Piping, and the American Welding Society, Welding Handbook.

B. Soldering and brazing procedures shall conform to ANSI B9.1 Standard Safety Code for Mechanical Refrigeration.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Provide factory-applied plastic end caps on each length of pipe and tube, except for concrete, corrugated metal, hub-and-spigot, and clay pipe. Maintain end caps through shipping, storage and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.

B. Protect stored pipes and tubes. Elevate above grade and enclose with durable, waterproof wrapping. When stored inside, do not exceed structural capacity of the floor.

C. Protect flanges, fittings, and specialties from moisture and dirt by inside storage and enclosure, or by packaging with durable, waterproof wrapping.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Refer to the individual piping system specification Sections in Division 22 for specifications on piping and fittings relative, to that particular system.

B. Weld-O-Lets: Welding Weld-O-Lets of domestic manufacture may be used in lieu of tees where branch connection pipe size is two or more pipe sizes smaller than main header size.

2.02 JOINING MATERIALS

A. Welding Materials: Comply with Section II, Part C, ASME Boiler and Pressure Vessel Code for welding materials appropriate for the wall thickness and chemical analysis of the pipe being welded.

B. Brazing Materials: Comply with SFA-5.8, Section II, ASME Boiler and Pressure Vessel Code for brazing filler metal materials appropriate for the materials being joined.

C. Soldering Materials: Refer to individual piping system specifications for solder appropriate for each respective system.
   1. Soldering materials shall not contain lead.

D. Gaskets for Flanged Joints: Gasket material shall be full-faced for cast-iron flanges and raised-face for steel flanges. Select materials to suit the service of the piping system in which installed and which conform to their respective ANSI Standard (A21.11, B16.20, or B16.21). Provide materials that will not be detrimentally affected by the chemical and thermal conditions of the fluid being carried.

2.03 SLEEVES AND SEALS

A. Sleeves:
   1. Sheet-Metal Sleeves: 5" and Smaller, 20 gage galvanized sheet metal; 6" and Larger, 10 gage, galvanized sheet metal, round tube closed with welded longitudinal joint.
   2. Steel Sleeves: Schedule 40 galvanized, welded steel pipe, ASTM A53, Grade A.
   3. Galvanized steel telescoping type: Galvanized sheet metal per manufacturer’s standards.
   4. Polyethylene Sleeves: Manufacturer's standard product.

B. Mechanical Sleeve Seals: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.04 FIRESTOP SEALANT

A. Fire stopping material shall be asbestos-free and capable of maintaining an effective barrier against flame and gases in compliance with the following requirements:
   1. Flame Spread: 25 or less, ASTM E 84.
   2. Smoke Development: 50 or less, ASTM E 84.
   3. Combustibility: Noncombustible, ASTM E 136.

B. Material when installed shall have the same fire rating as the assembly in which it is being installed.

2.05 PIPING ISOLATION

A. Manufacturer's standard product for providing sound and electrolysis isolation.

PART 3 - EXECUTION

3.01 PREPARATION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris for both inside and outside of piping and fittings before assembly.

3.02 INSTALLATIONS

A. General Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of the piping systems. Location and arrangement of piping layout take into consideration pipe sizing and friction loss, expansion, pump sizing, and other design considerations. So far as practical, install piping as indicated. Refer to individual system specifications for requirements for coordination drawing submittals.

B. Conceal all pipe installations in walls, pipe chases, utility spaces, above ceilings, below grade or floors, unless indicated otherwise.

C. Install piping free of sags or bends and with ample space between piping to permit proper insulation applications.

D. Install exposed piping at right angles or parallel to building walls. Diagonal runs are not permitted, unless expressly indicated on the Drawings.

E. Install piping tight to slabs, beams, joists, columns, walls, and other permanent elements of the building. Provide space to permit insulation applications, with 1" clearance outside the insulation. Allow sufficient space above removable ceiling panels to allow for panel removal.

F. Locate groups of pipes parallel to each other, spaced to permit applying full insulation and servicing of valves.

G. Install drains at low points in mains, risers, and branch lines consisting of a tee fitting, 3/4" ball valve, and short 3/4" threaded nipple and cap.

H. Exterior Wall Penetrations: Seal pipe penetrations through exterior walls using sleeves and mechanical sleeve seals.

I. Coordinate to provide curb, minimum 4" above finish floor, for all pipe shafts or floor openings for multiple pipes.

J. Fire Barrier Penetrations: Where pipes pass through fire rated walls, partitions, ceilings, or floors, the fire rated integrity shall be maintained.

3.03 PIPE SUPPORTS AND HANGERS

A. All pipe Supports and Hangers shall be per requirements of Specification Section 22 0529 “Supports and Anchors.”

3.04 FITTINGS AND SPECIALTIES

A. Use fittings for all changes in direction and all branch connections.

B. Remake leaking joints using new materials.

C. Install Y-type strainers with blow-down valves on the supply side of each control valve, pressure reducing or regulating valve, solenoid valve, and elsewhere as indicated.

D. Install unions adjacent to each valve and at the final connection to each piece of equipment and plumbing fixture having 2" and smaller connections, and elsewhere as indicated.

E. Install Flanges in piping 2-1/2" and larger, where indicated, adjacent to each valve, and at the final connection to each piece of equipment.

F. Install dielectric unions to connect piping materials of dissimilar metals in dry piping systems (gas, compressed air, vacuum).

G. Install dielectric fittings to connect piping materials of dissimilar metals in wet piping systems (water, steam).

3.05 JOINTS

A. Steel Pipe Joints:
   1. Pipe 2" and Smaller: Thread pipe with tapered pipe threads in accordance with ANSI B2.1. Cut threads full and clean using sharp dies. Ream threaded ends to remove burrs and restore full inside diameter. Apply pipe joint lubricant or sealant suitable for the service for which the pipe is intended on the male threads at each joint and tighten to leave not more then 3 threads exposed.
   2. Pipe Larger than 2":
      a. Weld pipe joints (except for exterior water service pipe) in accordance with ASME Code for Pressure Piping, B31.
      b. Weld pipe joints of exterior water service pipe in accordance with AWWA C206.
      c. Install flanges on all valves, apparatus, and equipment. Weld pipe flanges to pipe ends in accordance with ASME B31.1.0 Code for Pressure Piping. Clean flange faces and install gaskets. Tighten bolts to torque specified by manufacturer of flange and flange bolts, to provide uniform compression of gaskets.

B. Non-ferrous Pipe Joints:
   1. Brazed and Soldered Joints: For copper tube and fitting joints, braze joints in accordance withANSI B31.1.0 -Standard Code for Pressure Piping, Power Piping and ANSI B9.1 - Standard Safety Code for Mechanical Refrigeration.
   2. Thoroughly clean tube surface and inside surface of the cup of the fittings, using every fine emery cloth, prior to making soldered or brazed joints. Wipe tube and fittings clean and apply flux. Flux shall not be used as the sole means for cleaning tube and fitting surfaces.
   3. Mechanical Joints: Flared compression fittings may be used for refrigerant lines 3/4" and smaller.

C. Joints for other piping materials are specified within the respective piping systems sections.

3.06 INSTALLATION OF SLEEVES

A. Provide pipe sleeves for pipes to pass through walls, floor, and roofs. Diameter of sleeve to be 1-inch larger than the outside diameter of pipe or pipe and covering of insulated pipe. Galvanized steel telescoping type sleeves or polyethylene may be used. Where seepage may occur, use steel pipe sleeves.

B. All pipe sleeves through floors other than floors on grade shall extend 2-inches above finished floor and shall be caulked with mineral wool. Provide collar where polyethylene sleeve is used.

C. Where required in existing construction, or where sleeves have been omitted, openings for pipe may be core drilled in floors and/or walls or partitions, providing prior acceptance of such core drilling is obtained from the Architect. Holes core drilled through floors above grade shall be provided with sleeves extending 2-inches above finish floor as hereinbefore specified.

D. Seal with resilient sealant: Dow Corning "Fire Stop" or approved equal.

3.07 INSTALLATION OF FIRE STOP SEALANT

A. Fire-stopping shall be provided at, but not limited to, duct, and piping penetrations through floor slabs and through time rated partitions or firewalls.

B. Install fire-stopping materials in accordance with the manufacturer's instructions and the following requirements.
   1. Filling: Fire-stopping materials shall completely fill the void spaces.

C. Coordination: Coordinate the work with other trades. Firestopping materials at penetrations of insulated pipes and ducts shall be applied prior to insulation, unless the insulation meets the requirements specified for firestopping.

D. Surface Preparation: Surfaces to be in contact with firestopping materials shall be free of dirt, grease, oil, loose material, rust, or other substances that may affect proper fitting or the required fire resistance.

3.08 INSTALLATION OF PIPE ISOLATION

A. Provide sound and electrolysis isolation on all un-insulated, pipes, Semco "Trisolators" or Potter-Roemer "Prisolators."

3.09 INSTALLATION OF PIPE FLASHING

A. Pipe flashing assemblies, "Semco" Fig. 1100-4, as required, seal the joint between flashing and pipe with waterproofing compound. Install counter-flashing sleeve to cover a minimum of 3/4-inch to top of lead flashing, making the top joint permanently watertight.

3.10 TESTING OF PIPING

A. Provide notification of test at least three working days prior to tests on all or part of any piping system. Do not allow or cause any piping system to be insulated, covered, concealed or enclosed until such systems have been tested and reviewed. Provide all necessary materials (including temporary isolation valves or caps), pumps, testing media and labor for testing. Temporarily remove any device in piping system, which will not withstand test pressure specified, and reinstall same after successful testing. Test time begins to accrue after full test pressure is achieved.

B. Testing and inspection of all piping systems and associated equipment for leaks shall be accomplished after installation and cleaning and prior to placing into service. Flanges, threaded joints and all welds shall be left unpainted and uninsulated until the piping systems have been approved.

C. A rigid visual inspection of each specific piping system shall be made prior to conducting tightness tests, to ascertain that all appurtenances and equipment are provided, properly connected, and supported, and in all respects ready for testing.

D. Equipment such as pumps, chillers, tanks, heat exchangers, flexible hose, safety valves and similar equipment shall not be subjected to the piping system test pressure. Equipment shall either be disconnected from the piping or be isolated by valves or blanks during testing and reinstalled after acceptance by the Owner.

E. Indicating pressure gauges mounted locally may be tested with the lines provided the test pressure does not exceed the scale range.

F. Orifice plates, rotometers, displacement meters and other line inserts shall either not be installed until completion of all testing or shall be removed prior to any tests and reinstalled after test has been accepted by the Owner.

G. The application of pressure to a system, shall be under control, at all-times so that in no case shall the test pressure be exceeded by more than 6 percent.

H. Gauges used for testing shall be tested for accuracy as directed or approved by the Owner, and then installed as close as possible to the low point of the piping system.

I. Do not apply test pressure until the piping system and its contents approach the same temperature.

J. While piping is under test, exercise care that excessive pressure does not occur due to increase in ambient temperature.

K. Control Valves:
   1. Control valves which are installed with block and by-pass valve shall have the block valve closed, the by-pass valve opened, and a temporary pipe piece inserted in place of the control valve (or a test blank may be installed on each side of the control valve) until all flushing and testing of all lines of that system is completed and accepted by the Owner, after which they shall be reinstalled.
   2. Control valves installed without block or by-pass valves shall be replaced by a pipe piece during flushing and testing of the system. After acceptance of the system flushing valves shall be reinstalled.

L. Minimum piping test pressures shall be as noted in tabulation; or they shall be 150 percent of design pressure for the specific system being tested, whichever is higher.

SYSTEM	TEST MEDIUM	TESTING PRESSURE (PSIG)	DURATION (HOURS	ACCEPTABLE TOLERANCE
Soil, Water, Vent, & Storm Water	Water	Top of highest vent	4	No joint sweat
Water	Water	150	4	None. Except temperature change.
Fuel Gas	Air	60	4	None. Except temperature change.
Fire Sprinkler	Water	200	4	None. Except temperature change.

M. Conduct hydrostatic tests with water at a temperature below 100 degrees F.
1. Fill the system slowly with water and vent at highest points to expel the air before pressurizing.
2. Carefully examine all joints for leaks or defects.
3. Provide connections as required to accomplish the above.

N. Keep accurate test records of each line or system tested and provide copies of same to Owner after acceptance. Each test shall include:
1. Identification of piping system and test number.
2. Testing medium.
3. Test pressure.
4. Date of test acceptance.

3.11 ADJUSTMENTS

A. At the completion of the Work, completely adjust all valves and equipment for their proper use and rating.

END OF SECTION 22 1100

SECTION 22 1116

WATER DISTRIBUTION PIPING (INSIDE BUILDING)

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This section includes potable cold water, hot water, and circulation hot water piping, fittings, and specialties within the building to a point of 5 feet outside the building.

1.02 RELATED SECTIONS

A. The following sections contain requirements that relate to this section.
   1. Division 22
      a. Section 220500 “Common Work Results for Plumbing.”
      b. Section 220503 “Earthwork for Plumbing Systems.”
      c. Section 220511 "Supplementary Plumbing Requirements.”
      d. Section 220523 “Valves.”
      e. Section 220553 “Plumbing Identification.”
   2. Division 07 Section "Joint Sealers" for materials and methods for sealing pipe penetrations through rated walls and fire and smoke barriers.

B. Separate sections of Division 22 specify Plumbing Piping, Supports and Anchors, piping system identification materials and requirements, general duty valves, pipe insulation, fire protection piping, and plumbing equipment.

1.03 DEFINITIONS

A. Water Distribution Pipe: A pipe within the building or on the premises that conveys water from the water service pipe or meter to the points of usage.
B. Water Service Pipe: The pipe from the water main or other source of potable water supply to the water distributing system of the building served.
C. Pipe sizes used in this Specification are nominal pipe size (NPS).

1.04 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specifications Sections.
   1. Product data for each piping specialty and valve specified.
   2. Test reports specified in Part 3 of this Section.
   3. Maintenance data for each piping specialty and valve specified for inclusion in Maintenance Manual specified in Division 01 and Division 22 Section "Common Work Results for Plumbing."

1.05 QUALITY ASSURANCE

A. Codes and Standards
   1. California Building Code 2022, Title 24, Part 2 for Accessibility Requirements.
      a. Accessible plumbing fixtures for adults; dimensions shall comply with the requirements of CCT, T-24, Section 1115.B.
      b. Heights and location of fixtures shall be according to CCR, T-24, Chapter 11-B and Table 1115.B-1.
      c. Fixture Controls shall comply with CCR, T-24 Section 1115.B.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide factory-applied plastic end caps on each length of pipe and tube, except for concrete, corrugated metal, hub-and-spigot, clay pipe. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.

B. Protect stored pipes and tubes. Elevate above grade and enclose with durable, waterproof wrapping. When stored inside, do not exceed structural capacity of the floor.

C. Protect flanges, fittings, and specialties, from moisture and dirt by inside storage and enclosure, or by packaging with durable, waterproof wrapping.

D. Store CPVC, and PVC pipe and fittings to protect from direct sunlight.

E. Store pipe in a manner to prevent sagging and bending.

1.07 SEQUENCING AND SCHEDULING

A. Coordinate the size and location of concrete equipment pads. Cast anchor-bolt inserts into pad. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Coordinate the installation of pipe sleeves for foundation wall penetrations.

1.08 EXTRA MATERIALS

A. Maintenance Stock: Furnish one valve key for each key-operated wall hydrant, hose bib, fixture supply, or faucet installed.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer Uniformity: Conform to the requirements specified in Division 22 Section "Common Work Results for Plumbing."
   1. Hose Bibs:
      a. Lee Brass Co.
      b. Acorn.
      c. Watts Regulator Co.
      d. Woodford Mfg. Co.
   2. Relief Valves:
      a. Cash (A. W.) Valve Mfg. Corp.
      b. Watts Regulator Co.
      c. Zurn Industries, Inc. Wilkins Regulator Divs.
   3. Water Hammer Arresters:
      a. Precision Plumbing Products, Inc.
      b. Smith (Jay R.) Mfg. Co.
      c. Sioux Chief.
      d. Watts Regulator Co.
      e. Zurn Industries, Inc.; Hydromechanics Div.
   4. Vacuum Breakers for Hose Connections:
      a. Cash (A.W.) Valve Mfg. Corp.
      b. Conbraco Industries, Inc.
      c. Watts Regulator Co.
   5. Mechanical Sleeve Seals:
      a. Thunderline Corp.

6. Pipe Escutcheons:
   a. Chicago Specialty Mfg. Co.
   b. Grinnell.
7. Dielectric Waterway Fittings:
   a. Epco Sales, Inc.
   b. Victaulic Company of America.
8. Dielectric Unions:
   a. Eclipse, Inc.
   b. Perfection Corp.
   c. Watts Regulator Co.

2.02 PIPE AND TUBE MATERIALS, GENERAL

A. Pipe and Tube: Refer to Part 3, Article "Application, General," for identification of systems where the below materials are used.

B. Copper Tube: (Within Building) ASTM B88, Type L Water Tube, drawn temper of domestic manufacture.

C. Copper Tube: (Underground) ASTM B88, Type K Water Tube, annealed temper of domestic manufacture.

2.03 FITTINGS

A. Wrought Copper Solder-Joint Fittings: ANSI B16.22, streamlined pattern of domestic manufacture.

B. Wrought Copper and Bronze Grooved-End Fittings: ASTM B75 Tube and ASTM B584 Bronze Castings of domestic manufacture.

C. Unions: ASME B16.39, malleable iron, Class 150, hexagonal stock, with ball-and-socket joints, metal-to-metal bronze seating surfaces, female threaded ends. Threads shall conform to ASME B1.20.1. and be of domestic manufacture.

D. Dielectric Unions: Threaded, solder, or grooved-end connections as required to suit application and constructed to isolate dissimilar metals, prevent galvanic action, and prevent corrosion of domestic manufacture.

E. Dielectric Unions: Flexible Connectors: Stainless-steel bellows with woven, flexible, bronze wire reinforced protective jacket; minimum 150 PSIG working pressure, maximum 250 deg. F. operating temperature. Connectors shall have flanged or threaded-end connections to match equipment connected and shall be 12" long and capable of 3/4-inch misalignment. Sweat ends are not acceptable. Fittings shall be of domestic manufacture.

2.04 JOINING MATERIALS

A. Solder Filler Metal: ASTM B32, 95-5 Tin-Antimony 'lead-free' solder.

B. Brazing Filler Metals: AWS A5.8, BCUP Series.

C. Gasket Material: Thickness, material, and type suitable for fluid to be handled and design temperatures and pressure.

2.05 GENERAL DUTY VALVES

A. General-duty valves (i.e., gate, globe, check, ball, and butterfly valves) are specified in Division 22 Section "Valves." Special duty valves are specified below by their generic name; refer to Part 3 Article "Valve Application" for specific uses and applications for each valve specified.

2.06 SPECIAL DUTY VALVES

A. Balance Cocks: 400 PSI WOG, 2-piece, ball valve, handle, memory stop, with threaded-end connections conforming to ASME B1.20.1.

B. Balance Cocks: 400 PSI WOG, 2-piece bronze, ball valve, handle, memory stop, with solder-end connections.

2.07 PIPING SPECIALTIES

A. Water Hammer Arresters:
   1. J.R. Smith or Approved Equal.
   2. Bellows type, with stainless steel casing and bellows, pressure rated for 250 psi, tested and certified in accordance with PDI Standard WH-201 shall be of the following sizes unless otherwise indicated on the drawings:
      a. Self-closing valves, lavatories, sinks, etc.

Supply header or pipe size (Inch)	Manufacturer Name	Water Hammer Arrester Model No.
1/2"	J.R. Smith	5005
3/4"	J.R. Smith	5005
1"	J.R. Smith	5010

   3. Flushometer, automatic and solenoid valves:
      a. J.R. Smith or Approved Equal.

Supply header or pipe size (Inch)	Manufacturer Name (a)	Water Hammer Arrester Model No.
3/4”	J.R. Smith	5010
1”	J.R. Smith	5010
1-1/4"	J.R. Smith	5030
1-1/2"	J.R. Smith	5040
2”	J.R. Smith	5050

B. Y-Type Strainers: Provide strainers full line size of connecting piping, with ends matching piping system materials. Screens shall be Type 304 stainless steel, with 3/64" perforations at 233 per square inch. Strainers in copper lined to have bronze bodies.
   1. Provide strainers with 125 psi working pressure rating for low pressure applications, and 250 psi pressure rating for high pressure application.
   2. Threaded ends, 2" and Smaller: Cast-iron body, or bronze body, screwed screen retainer with centered blow-down fitted with pipe plug.
   3. Threaded Ends, 2-1/2" and Larger: Cast-iron body or bronze body bolted screen retainer with off-center blow-down fitted with pipe plug.
   4. Flanged Ends, 2-1/2" and Larger: Cast-iron body or bronze body, bolted screen retainer with off-center blow-down fitted with pipe plug.

C. Hose-Connections: Hose connections shall have garden hose threaded outlets conforming to ASME B1.20.7.

D. Hose Bibs: Bronze body with chrome- or nickel-plated finish, with renewable composition disc, removable wheel handle, vacuum breaker, 3/4- inch solder inlet, hose outlet.

E. Vacuum Breakers: Hose connection vacuum breakers shall conform to ASSE Standard 1011, with finish to match hose connection.

F. Relief Valves: Sizes for relief valves shall be in accordance with ASME Boiler and Pressure Vessel Codes for indicated capacity of the appliance for which installed.
   1. Combined Pressure-Temperature Relief Valves: Bronze body, test lever, thermostat, complying with ANSI Z21.22 listing requirements for temperature discharge capacity. Temperature relief valves shall be factory set at 210 deg. F., and pressure relief at 150 PSI.

G. Escutcheons: Chrome-plated, stamped steel, hinged, split-ring escutcheon, with set screw. Inside diameter shall closely fit pipe outside diameter, or outside of pipe insulation.

H. Sleeves:
   1. Sheet-Metal Sleeves: 10 gage, galvanized sheet metal, round tube closed with welded longitudinal joint.
   2. Steel Sleeves: Schedule 40 galvanized, welded steel pipe, ASTM A53, Grade A.

I. Mechanical Sleeve Seals: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine rough-in requirements for plumbing fixtures and other equipment with water connections to verify actual locations of piping connections prior to installation.

3.02 PREPARATION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris for both inside and outside of piping and fittings before assembly.

3.03 PIPE APPLICATIONS

A. Install Type L, drawn copper tube with wrought copper fittings and solder joints for pipe sizes 4 inches and smaller, above ground, within building.

B. Install Type K, annealed temper copper tube for pipe sizes 2 inches and smaller, with minimum number of joints, below ground.

C. Water piping in sizes 2-1/2 to 6 inches may be Type L drawn copper tube with roll-grooved ends and mechanical couplings, above ground within building.

3.04 PIPING INSTALLATION

A. General Locations and Arrangements; Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of the piping systems. Location and arrangement of piping layout take into consideration pipe sizing and friction loss, expansion, pump sizing, and other design considerations. So far as practical, install piping as indicated.

B. Use fittings for all changes in direction and branch connections.

C. Install exposed piping at right angles or parallel to building walls. Diagonal runs are not permitted unless expressly indicated.

D. Install piping free of sags or bends and with ample space between piping to permit proper insulation applications.

E. Conceal all piping installations in walls, pipe chases, utility spaces, above ceilings, below grade or floors, unless indicated to be exposed to view.

F. Install piping tight to slabs, beams, joists, columns, walls, and other permanent elements of the building. Provide space to permit insulation applications, with 1-inch clearance outside the insulation. Allow sufficient space above removable ceiling panels to allow for panel removal.

G. Locate groups of pipes parallel to each other, spaced to permit applying full insulation and servicing of valves.

H. Install drains at low points in mains, risers, and branch lines consisting of a tee fitting, 3/4-inch ball valve, and short 3/4-inch threaded nipple and cap.

I. Pipe sleeves smaller than 6 inches shall be galvanized steel pipe; pipe sleeves 6 inches and larger shall be galvanized steel sheet metal.

J. Exterior Wall Penetrations: Seal pipe penetrations through exterior walls with sleeves and mechanical sleeve seals.

K. Fire Barrier Penetrations: Where pipes pass though fire-rated walls, partitions, ceilings, and floors, maintain the fire-rated integrity. Refer to Division 07 for special sealers and materials.

3.05 HANGERS AND SUPPORTS

A. General: Hanger, support, and anchor devices conforming to MSS SP-69 are specified in Division 22, Section "Supports and Anchors." Conform to the table below for maximum spacing of supports.

B. Pipe Attachments: Install the following:
   1. Adjustable steel clevis hangers, MSS Type 1, for individual horizontal runs less than 20 feet in length.
   2. Adjustable roller hangers, MSS Type 43, and spring hangers, MSS Type 41 with Type 49, for individual horizontal runs 20 feet and longer.
   3. Pipe roll, complete MSS Type 44 for multiple horizontal runs, 20 feet or longer, support on a trapeze.
   4. Spring hangers to support vertical runs.

C. Install hangers for horizontal piping with the following maximum spacing and minimum rod sizes:

Steel & Copper Nom. Pipe Size – In.	Steel Pipe Max. Span – Ft.	Steel Pipe Min. Rod	Copper Tube Max. Span – Ft.	Copper Tube Min. Rod
Up to 3/4	7	3/8	5	3/8
1	7	3/8	6	3/8
1-1/4	7	3/8	7	3/8
1-1/2	9	3/8	8	3/8
2	10	3/8	8	3/8
2-1/2	11	3/8	9	3/8
3	12	1/2	10	1/2
3-1/2	13	1/2	11	1/2
4	14	5/8	12	1/2

D. Support vertical steel pipe and copper tube at each floor.

3.06 PIPE AND TUBE JOINT CONSTRUCTION

A. Soldered Joints: Comply with the procedures contained in the AWS "Soldering Manual."

B. Brazed Joints: Comply with the procedures contained in the AWS "Brazing Manual."
1. CAUTION: Remove stems, seats, and packing of valves and accessible internal parts of piping specialties before soldering and brazing.
2. Fill the tubing and fittings during soldering and brazing with an inert gas (nitrogen or carbon dioxide) to prevent formation of scale.
3. Heat joints to proper and uniform temperature.

C. Threaded Joints: Conform to ASME B1.20.1, tapered pipe threaded for field-cut threads. Join pipe fittings and valves as follows:
1. Note the internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
2. Align threads at point of assembly.
3. Apply appropriate tape or thread compound to the external pipe threads (except where dry seal threading is specified).
4. Assembly joint wrench tight. Wrench on valve shall be on the valve end into which the pipe is being threaded.
    a. Damaged Threads: Do not use pipe with corroded or damaged threads. If a weld opens during cutting or threading operations, that portion of pipe shall not be used.

D. Flanged Joints: Align flange surfaces parallel. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly with a torque wrench.

E. Grooved-End Joints: Prepare pipe and tubing and install in accordance with manufacturer's installation instructions.

3.07 SERVICE ENTRANCE

A. Extend water distribution piping to connect to water service piping, of size and in location indicated for service entrance to building. Water service piping is specified in separate section of Division 22.

B. Install sleeve and mechanical sleeve seal at penetrations through foundation wall for watertight installation.

3.08 VALVE APPLICATIONS

A. General-Duty Valve Applications: The Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
   1. Shut-off duty: Use gate, ball, and butterfly valves.
   2. Throttling duty: Use globe and ball valves.

3.09 INSTALLATION OF VALVES

A. Sectional Valves: Install sectional valves on each branch and riser, close to main, where branch or riser serves 2 or more plumbing fixtures or equipment connections, and elsewhere as indicated. For sectional valves 2 inches and smaller, use gate valves; for sectional valves 2-1/2 inches and larger, use gate or butterfly valves.

B. Shutoff Valves: Install shutoff valves at inlet and outlet of each plumbing equipment item and elsewhere as indicated.
   1. At plumbing equipment: 2" and smaller use gate or ball valves.
   2. At plumbing equipment: 2-1/2" and larger use gate or butterfly valves.
   3. For plumbing fixtures see fixture trim.
   4. All other locations use gate valves.

C. Drain Valves: Install drain valves on each plumbing equipment item, located to drain equipment completely for service or repair. Install drain valves at the base of each riser, at low points of horizontal runs, and elsewhere as required to drain distribution piping system completely. For drain valves use 3/4" hose end drain valve.

D. Hose Bibs: Install on exposed piping where indicated. Provide vacuum breaker.

3.10 INSTALLATION OF PIPING SPECIALTIES

A. Install backflow Preventers at each connection to mechanical equipment and systems and in compliance with the plumbing code and authority having jurisdiction. Install air cap fitting and pipe relief outlet drain without valves to nearest floor drain. Identify all piping downstream of backflow preventers as "industrial water."

B. Install pressure-regulating valves with inlet and outlet shutoff valves and balance cock bypass. Install pressure gage on valve outlet.

3.11 INSTALLATION OF PIPING WATER HAMMER ARRESTORS

A. Provide an air chamber at each valve water outlet or fixture supply for fixtures with manual closing valves. Air chamber shall be 18 inches long and one pipe size larger than supply to outlet. For a battery of fixtures, one air chamber 30 inches long and the full size of the header, but not less than 1 inch may be installed in lieu of individual air chambers. Precision Plumbing Products, JMJ "System Rated" arrestors are acceptable in lieu of air chambers.

B. Install water hammer arrestors on supply line to fixtures with self-closing, automatic or Flushometer valves. Arrestors shall be as close as possible to individual fixtures and on the end of the header for a battery of fixtures. Arrestors shall be installed in the wall or furring, whenever possible, behind an access panel large enough to permit removal of the arrestor. Sizes as shown on the drawings or as specified hereinafter. Sizes and model numbers are J. R. Smith; equivalent arrestors by Josam, Wade or Zurn are acceptable.

3.12 EQUIPMENT CONNECTIONS

A. Piping Runouts to Fixtures: Provide hot and cold-water piping runouts to fixtures of sizes indicated, but in no case smaller than required by Plumbing Code.

B. Equipment Connections: Connect hot and cold-water piping system to equipment as indicated. Provide shutoff valve and union for each connection; provide drain valve on drain connection. For connections 2-1/2 inches and larger, use flanges instead of unions.

3.13 FIELD QUALITY CONTROL

A. Inspections: Inspect water distribution piping as follows:
   1. Do not enclose, cover, or put into operation water distribution piping system until it has been inspected and approved by the authority having jurisdiction.
   2. During the progress of the installation, notify the plumbing official having jurisdiction at least 24 hours prior to the time such inspection must be made. Perform tests specified below in the presence of the plumbing official.
      a. Rough-In Inspection: After system is roughed in and prior to setting fixtures, arrange for inspection of the piping system before concealed or closed in.
      b. Final Inspection: Arrange for a final inspection by the plumbing official to observe the tests specified below and to ensure compliance with the requirements of the plumbing code.
   3. Re-inspections: Whenever the plumbing official finds that the piping system will not pass the test or inspection, make the required corrections and arrange for re-inspection by the plumbing official.
   4. Reports: Prepare inspection reports signed by the plumbing official.

B. Test water distribution piping as follows:
   1. Test for leaks and defects all new water distribution piping systems and parts of existing systems that have been altered, extended or repaired. If testing is performed in segments, submit a separate report for each test, complete with a diagram of the portion of the system tested.
   2. Leave uncovered and unconcealed all new, altered, extended, or replaced water distribution piping until it has been tested and approved. Expose all such work for testing that has been covered or concealed before it has been tested and approved.
   3. Cap and subject the piping system to a static water pressure of 50 psig above the operating pressure without exceeding the pressure rating of the piping system materials. Isolate the test source and allow to-stand for 4 hours. Leaks and loss in test pressure constitute defects that must be repaired.
   4. Repair all leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.
   5. Prepare reports for all tests and required corrective action.

3.14 ADJUSTING AND CLEANING

A. Clean and disinfect water distribution piping as follows:
   1. Purge all new water distribution piping systems and parts of existing systems that have been altered, extended, or repaired prior to use.

   2. Use the purging and disinfecting procedure prescribed by the authority having jurisdiction or, in case a method is not prescribed by that authority, the procedure described in either AWWA C651, or AWWA C652, or as described below:
      a. Flush the piping system with clean, potable water until dirty water does not appear at the points of outlet.

b. Fill the system or part thereof with a water/chlorine solution containing at least 50 parts per million of chlorine. Isolate (valve off) the system or part thereof and allow to stand for 24 hours.
c. Drain the system or part thereof of the previous solution and refill with a water/chlorine solution containing at least 200 parts per million of chlorine and isolate and allow to stand for 3 hours.
d. Following the allowed standing time, flush the system with clean, potable water until chlorine does not remain in the water coming from the system.
e. Submit water samples in sterile bottles to the authority having jurisdiction. Repeat the procedure if the biological examination made by the authority shows evidence of contamination.

B. Prepare reports for all purging and disinfecting activities.

3.15 COMMISSIONING

A. Fill the system. Check compression tanks, where used, to determine that they are not air bound and that the system is completely full of water.

B. Before operating the system, perform these steps:
1. Close drain valve, hydrants, and hose bibs.
2. Open valves to full open position.
3. Remove and clean strainers.
4. Check pumps for proper direction of rotation. Correct improper wiring.
5. Lubricate pump motors and bearings.

END OF SECTION 22 1116

SECTION 22 1119

PIPING SPECIALTIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies piping specialties and installation methods common to more than one section of Division 22.

1.02 RELATED SECTIONS

A. This section applies to all piping systems specified in Division 22.

B. Valves are specified in a separate section and in individual piping system Sections of Division 22.

C. Fire Barrier Penetration Seals are specified in Section 22 1100.

1.03 SUBMITTALS

A. Refer to Division 01 and Section 22 0500 “Common Work Results for Plumbing” for administrative and procedural requirements for submittals.

B. Product Data: Submit product data on the following items:
   1. Escutcheons.
   2. Dielectric Unions and Fittings.
   3. Mechanical Sleeve Seals.
   4. Strainers.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect flanges, fittings, and specialties from moisture and dirt by inside storage and enclosure, or by packaging with durable, waterproof wrapping.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer Uniformity: Conform to the requirements specified in Common Work Results for Plumbing, under "Product Options."

B. Manufacturer: Subject to compliance with requirements, provide piping materials and specialties from one of the following:
   1. Pipe Escutcheons:
      a. McGuire.
      b. BrassCraft.
      c. Pasco.
   2. Dielectric Waterway Fittings:
      a. Epco Sales, Inc.
      b. Victaulic Company of America.
   3. Dielectric Unions:
      a. Eclipse, Inc.
      b. Perfection Corp.
      c. Watts Regulator Co.

4. Strainers:
   a. Armstrong Machine Works.
   b. Hoffman Specialty ITT; Fluid Handling Div.
   c. Metraflex Co.
   d. R-P&C Valve; Div. White Consolidated Industries, Inc.
   e. SpiraxSarco.
   f. Trane Co.
   g. Victaulic Co. of America. (low-pressure applications only).
   h. Watts Regulator Co.
5. Mechanical Sleeve Seals:
   a. Thunderline Corp.

2.02 PIPE AND FITTINGS

A. Refer to the individual piping system specification sections in Division 22 for specifications on piping and fittings, relative to that particular system.

2.03 JOINING MATERIALS

A. Welding Materials: Comply with Section II, Part C, ASME Boiler and Pressure Vessel Code for welding materials appropriate for the wall thickness and chemical analysis of the pipe being welded.

B. Brazing Materials: Comply with SFA-5.8, Section II, ASME Boiler and Pressure Vessel Code for brazing filler metal materials appropriate for the materials being joined.

C. Soldering Materials: Refer to individual piping system specifications for solder appropriate for each respective system.

D. Gaskets for Flanged Joints: Gasket material shall be full-faced for cast-iron flanges and raised-face for steel flanges. Select materials to suit the service of the piping system in which installed and which conform to their respective ANSI Standard (A21.11, B16.20, or B16.21). Provide materials that will not be detrimentally affected by the chemical and thermal conditions of the fluid being carried.

2.04 PIPING SPECIALTIES

A. Escutcheons: Chrome-plated, stamped steel, hinged, split-ring escutcheon, with set screw. Inside diameter shall closely fit pipe outside-diameter, or outside of pipe insulation where pipe is insulated. Outside diameter shall completely cover the opening in floors, walls, or ceilings.

B. Unions: Malleable-iron, Class 150 for low pressure service and class 250 for high pressure service; hexagonal stock, with ball-and-socket joints, metal-to-metal bronze seating surfaces; female threaded ends.

C. Dielectric Unions: Provide dielectric unions with appropriate end connections for the pipe materials in which installed (screwed, soldered, or flanged), which effectively isolate dissimilar metals, prevent galvanic action, and stop corrosion.

D. Dielectric Waterway Fittings: Electroplated steel or brass nipple, with an inert and non-corrosive, thermoplastic lining.

E. Y-Type Strainers: Provide strainers full line size of connecting piping, with ends matching piping system materials. Screens shall be Type 304 stainless steel, with 3/64" perforations at 225 holes per square inch.
   1. Provide strainers with 125 psi working pressure rating for low-pressure applications, and 250 psi pressure rating for high-pressure application.
   2. Threaded Ends, 2" and Smaller: Cast-iron body, screwed screen retainer with centered blowdown fitted with pipe plug.
   3. Threaded Ends, 2-1/2" and Larger: Cast-iron body, bolted screen retainer with off-center blowdown fitted with pipe plug.
   4. Flanged Ends, 2-1/2" and Larger: Cast-iron body, bolted screen retainer with off-center blow-down fitted with pipe plug.
   5. Butt Welded Ends, 2-1/2" and Larger for Low Pressure Application: Schedule 40 cast carbon steel body, bolted screen retainer with off-center blowdown fitted with pipe plug.
   6. Butt Welded Ends, 2-1/2" and Larger for High Pressure Application: Schedule 80 cast carbon steel body, bolted screen retainer with off-center blowdown fitted with pipe plug.
   7. Grooved Ends, 2-1/2" and Larger: Tee pattern, ductile-iron or malleable-iron body and access end cap, access coupling with EDPM gasket.

F. Mechanical Sleeve Seals: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

PART 3 - EXECUTION

3.01 ESCUTCHEONS

A. Install escutcheons at all exposed penetrations of piping through walls, ceilings, and floors in rooms with finish surfaces.

3.02 FITTINGS AND SPECIALTIES

A. Install strainers on the supply side of each control valve, pressure reducing or regulating valve, solenoid valve, and elsewhere as indicated.

B. Install unions adjacent to each valve, and at the final connection to each piece of equipment and plumbing fixture having 2" and smaller connections, and elsewhere as indicated.

C. Install Flanges in piping 2-1/2" and larger, where indicated, adjacent to each valve, and at the final connection to each piece of equipment.

D. Install dielectric unions to connect piping materials of dissimilar metals in dry piping systems (gas, compressed air, vacuum).

E. Install dielectric fittings to connect piping materials of dissimilar metals in wet piping systems (water, steam).

END OF SECTION 22 1119

SECTION 22 1316

SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section includes building sanitary and storm drainage and vent piping systems, including drains and drainage specialties.

1.02 RELATED SECTIONS

A. The following sections contain requirements that relate to this section:
   1. Division 22 Section "Plumbing Identification" for labeling and identification of drainage and vent piping.

1.03 DEFINITIONS

A. Building Drain: That part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer.

B. Building Sewer: That part of the piping within public or private premises which conveys sewage, rain-water, or other liquid wastes to a point of disposal.

C. Drainage System: Includes all the piping within public or private premises which conveys sewage, rain-water or other liquid wastes to a point of disposal. It does not include the mains of public sewer systems or a private or public sewage treatment or disposal plant.

D. Vent System: A pipe or pipes installed to provide a flow of air to or from a drainage system, or to provide a circulation of air within such system to protect trap seals from siphonage and backpressure.

1.04 SUBMITTALS

A. Product data for the following products:
   1. Drainage piping specialties.

1.05 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the provisions of the following:
   1. California Plumbing Code (CPC): Current edition in use by authority having jurisdiction.

1.06 SEQUENCING AND SCHEDULING

A. Coordinate the installation of roof drains, flashing, and roof penetrations.

B. Coordinate flashing materials installation of roofing, waterproofing, and adjoining substrate work.

C. Coordinate the installation of drains in poured-in-place concrete slabs, to include proper drain elevations, installation of flashing, and slope of slab to drains.

D. Coordinate with installation of sanitary and storm sewer system as necessary to interface building drains with drainage piping system.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide drainage and vent systems from one of the following:
   1. Drainage Piping Specialties, including backwater valves, expansion joints, drains, trap primers, and vandal-proof vent caps:
      a. J. R. Smith Mfg. Co.
      b. Josam Mfg. Co.
      c. Zurn Industries Inc; Hydromechanics Div.
      d. Tyler Pipe; Subs. of Tyler Corp.

2.02 ABOVE GROUND DRAINAGE AND VENT PIPE AND FITTINGS

A. General: Select from the following options:
   1. Pipe Sizes Larger than 2": Cast-iron soil pipe. Conform to ASTM A74, for service weight, hub-and-spigot soil pipe and fittings, with clamps and compression gasket joints conforming to ASTM C564. Piping shall bear the CISPI stamp.
   2. Pipe Sizes Larger than 2": Hub-less cast-iron soil pipe. Conform to CISPI Standard 301, Service weight, cast-iron soil pipe and fittings, with neoprene gaskets conforming to CISPI Standard 310. Piping shall bear the CISPI stamp.

2.03 UNDERGROUND BUILDING DRAIN-PIPE AND FITTINGS

A. Pipe and fittings shall have heavy coating of coal tar varnish or 'asphaltum' on both inside and outside surfaces.

B. General: For pipe and fittings below grade and/or below finish floor of floors on grade select from the following options:
   1. Pipe Sizes 15" and Smaller: Cast-iron soil pipe. Conform to ASTM A74, for standard weight hub and spigot soil pipe and fittings, with clamps and neoprene gasket, conforming to ASTM C564. Piping shall bear the CISPI stamp.
   2. Pipe Sizes 16" and Smaller: Hub-less cast iron soil pipe, conform to CISPI Standard 301, service weight; with "Best" or "MG" cast iron joint connection couplings. Coupling body shall conform to ASTM A-48 or ASTM A-74 with neoprene gasket conforming to ASTM C-564. Piping shall bear the CISPI stamp.

2.04 DRAINAGE PIPE SPECIALTIES

A. Trap Primers: Bronze body valve with automatic vacuum breaker, with ½-inch connections matching piping system. Complying with ASSE 1018 of domestic manufacture.

B. Expansion Joints: Cast-iron body with adjustable bronze sleeve, bronze bolts with wing nuts.

C. Cleanout Plugs: Cast-bronze or brass, threads complying with ANSI B2.1, countersunk head.

2.05 CLEANOUTS

A. Cleanouts on cast iron soil pipe, iron body with ABS plugs screwed into caulking ferrules. Cleanouts on steel pipe, ABS plugs. Cleanouts on vitrified clay pipe, vitrified clay pipe. Where cleanouts occur in finished interior surfaces, smooth polished chromium plated. Exposed parts of floor cleanouts in finished rooms, non-slip polished nickel bronze. Floor cleanouts adjustable type. Where cleanouts occur in carpeted floor areas, the cover shall be elevated so as to be flush with finished carpeted areas.

B. Floor Cleanouts: Cast-iron body and frame, with cleanout plug and adjustable round top as follows:
   1. Floor level type in rooms with concrete floor: Smith #4021, Josam 58330-2, or Zurn Z1420-25 with cast iron top.

C. Wall Cleanouts: Cast-iron body adaptable to pipe with ABS plastic plug; stainless steel cover including screws.
   1. Wall type for cast-iron pipes: Smith #4532, Josam 58790-4, or Zurn Z-1445-1.
   2. Wall type for steel pipes: Smith #4472, Josam 58890-4, or Zurn 1460-8.

D. Flashing Flanges: Cast-iron watertight stack or wall sleeve with membrane flashing ring. Provide under-deck clamp and sleeve length as required.

E. Vent Flashing Sleeves: Cast-iron caulking type roof coupling for cast-iron stacks, cast-iron threaded type roof coupling for steel stacks.

F. Vandal-Proof Vent Caps: Cast-iron body full size of vent pipe, with caulked base connection for cast-iron pipes, threaded base for steel pipes.

2.06 FLOOR DRAINS

A. Floor drains are specified in Section 22 4200 "Commercial Plumbing Fixtures."

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify all dimensions by field dimensions. Verify that all drainage and vent piping and specialties may be installed in accordance with pertinent codes and regulations, the original design, and the referenced standards.

B. Verify existing grades, inverts, utilities, obstacles, and topographical conditions prior to installations.

C. Examine rough-in requirements for plumbing fixtures and other equipment having drain connections to verify actual locations of piping connections prior to installation.

D. Examine walls, floors, roof, and plumbing chases for suitable conditions where piping and specialties are to be installed.

E. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION FOUNDATION FOR UNDERGROUND BUILDING DRAINS

A. Grade trench bottoms to provide a smooth, firm, and stable foundation, free from rock, throughout the length of the pipe.

B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid and backfill with clean sand or pea gravel to indicated invert elevation.

C. Shape bottom of trench to fit bottom of pipe for 90-degrees (bottom 1/4 of the circumference). Fill unevenness with tamped sand backfill. At each pipe joint dig bell holes to relieve the bell of the pipe of all loads, and to ensure continuous bearing of the pipe barrel on the foundation.

3.03 PIPE APPLICATIONS - ABOVE GROUND, WITHIN BUILDING

A. General: Select from following options:
   1. Install hub-and spigot, service weight, cast-iron soil pipe with compression gasket joints for larger than 2 inches drainage and vent pipe. Piping shall bear the CISPI stamp.
   2. Install Hub-less, service weight, cast-iron soil pipe and fittings for larger than 2 inch drainage and vent pipe. Piping shall bear the CISPI stamp.

3.04 PIPE APPLICATIONS - BELOW GROUND, WITHIN BUILDING

A. General: Select from the following options:
   1. Install hub-and-spigot, heavy service weight, cast-iron, soil pipe and fittings with gasket joints for 15 inch and smaller drainage pipe. Piping shall bear the CISPI stamp.
   2. Install hub-less, service weight, cast-iron soil pipe with Anaco Husky SD 4000 stainless steel couplings with neoprene gaskets. Piping shall bear the CISPI stamp.

3.05 PIPE AND TUBE JOINT CONSTRUCTION

A. Copper Tubing: Solder joints in accordance with the procedures specified in AWS "Soldering Manual."

B. Cast-Iron Soil Pipe: Make lead and oakum caulked joints, compression joints, and hub-less joints in accordance with the recommendations in the CISPI Cast Iron Soil Pipe and Fittings Handbook, Chapter IV.

C. Install couplings per manufacturer's recommendations.

3.06 INSTALLATION

A. General Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of the piping systems. Location and arrangement of piping layout take into account many design considerations. So far as practical, install piping as indicated.

B. Use fittings for all changes in direction and all branch connections.

C. Install exposed piping at right angles or parallel to building walls. Diagonal runs are not permitted, unless expressly indicated.

D. Install piping free of sags or bends and with ample space between piping to permit proper insulation applications.

E. Conceal all pipe installations in walls, pipe chases, utility spaces, above ceilings, below grade or floors, unless indicated to be exposed to view.

F. Install piping tight to slabs, beams, joists, columns, walls, and other permanent elements of the building. Allow sufficient space above removable ceiling panels to allow for panel removal.

G. Exterior Wall Penetrations: Seal pipe penetrations through exterior walls using sleeves and mechanical sleeve seals. Pipe sleeves smaller than 6-inch shall be steel; pipe sleeves 6 inches and larger shall be sheet metal.

H. Fire Barrier Penetrations: Where pipes pass through fire rated walls, partitions, ceilings and floors, maintain the fire rated integrity.

I. Make changes in direction for drainage and vent piping using appropriate 45 deg. wyes, half-wye, or long sweep quarter, sixth, eight, or sixteenth bends. Sanitary tees or short quarter bends may be used on vertical stacks of drainage lines where the change in direction of flow is from horizontal to vertical, except use long-turn tees where two fixtures are installed back to-back and have a common drain.

J. Straight tees, elbows, and crosses may be used on vent lines. No change in direction of flow greater than 90 degrees shall be made. Where different sizes of drainage pipes and fittings are connected, use proper size, standard increasers and reducers. Reduction of the size of drainage piping in the direction of flow is prohibited.

K. Install underground building drains to conform with the plumbing code, and in accordance with the Cast Iron Soil Pipe Institute Engineering Manual. Lay underground building drains beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install required gaskets in accordance with manufacturer's recommendations for use of lubricants, cements, and other special installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

L. Install building drain pitched down at minimum slope of 1/4 inch per foot (2 percent) for piping 3 inch and smaller, and 1/8 inch per foot (1 percent) for piping 4 inch and larger.

M. Extend building drain to connect to sewer piping, of size and in location indicated for service entrance to building. Sewer piping is specified in a separate section of Division 22.

N. Install sleeve and mechanical sleeve through foundation wall for watertight installation.

3.07 HANGERS AND SUPPORTS

A. General: Hangers, supports, and anchorage devices are specified in Division 22 Section "Plumbing Piping." Conform to the table below for maximum spacing of supports.

B. Install the following pipe attachments:
1. Adjustable steel clevis hangers for individual horizontal runs less than 20 feet in length.

C. Install hangers at the following intervals:

Pipe material	Max. Horizontal Spacing (Ft.)	Max. Vertical Spacing (Ft.)
Cast Iron Pipe	5	15
Copper Tubing 1-1/2” & Smaller	6	10
Copper Tubing 2” & Larger	10	10

3.08 INSTALLATION OF PIPE SPECIALTIES

A. Install backwater valves in sanitary building drain piping as indicated, and as required by the plumbing code. For interior installation, provide cleanout cover flush to floor centered over backwater valve cover and of adequate size to remove valve cover for service.

B. Install expansion joints on vertical risers as indicated, and as required by the plumbing code.

C. Above Ground Cleanouts: Install in above ground piping and building drain piping as indicated, and:
   1. As required by plumbing code.
   2. At each horizontal change in direction of piping greater than 135 degrees.
   3. At maximum intervals of 50' for piping 3" and smaller and 100' for larger piping.
   4. At base of each vertical soil or waste stack.

D. Cleanouts Covers: Install floor and wall cleanout covers for concealed piping.

E. Flashing Flanges: Install flashing flange and clamping device with each stack and cleanout passing through roof, secure over stack flashing in accordance with manufacturer's instructions.

3.09 INSTALLATION OF TRAP PRIMERS

A. Install trap primers with piping pitched towards drain trap, minimum of 1/8 inch per foot (1 percent). Adjust trap primer for proper flow. Provide trap primer for all floor drains and floor sinks. Multiple outlet primers are acceptable.

3.10 CONNECTIONS

A. Piping Runouts to Fixtures: Provide drainage and vent piping runouts to plumbing fixtures and drains, with approved trap, of sizes indicated; but in no case smaller than required by the Plumbing Code.

3.11 FIELD QUALITY CONTROL

A. Inspections:
   1. Do not enclose, cover, or put into operation drainage and vent piping system until it has been inspected and approved by the authority having jurisdiction.
   2. During the progress of the installation, notify the plumbing official having jurisdiction, at least 24 hours prior to the time such inspection must be made. Perform tests specified below in the presence of the plumbing official.
      a. Rough-In Inspection: Arrange for inspection of the piping system before concealed or closed-in after system is roughed-in, and prior to setting fixtures.
      b. Final Inspection: Arrange for a final inspection by the plumbing official to observe the tests specified below and to ensure compliance with the requirements of the Plumbing Code.
   3. Re-inspections: Whenever the piping system fails to pass the test or inspection, make the required corrections, and arrange for re-inspection by the plumbing official.
   4. Reports: Prepare inspection reports, signed by the plumbing official.

B. Piping System Test: Test drainage and vent system in accordance with the procedures of the authority having jurisdiction, or in the absence of a published procedure, as follows:
   1. Test for leaks and defects all new drainage and vent piping systems and parts of existing systems, which have been altered, extended or repaired. If testing is performed in segments, submit a separate report for each test, complete with a diagram of the portion of the system tested.
   2. Leave uncovered and unconcealed all new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose all such work for testing, which has been covered or concealed before it has been tested and approved.

3. Rough Plumbing Test Procedure: Except for outside leaders and perforated or open jointed drain tile, test the piping of plumbing drainage and venting systems upon completion of the rough piping installation. Tightly close all openings in the piping system, and fill with water to the point of overflow, but not less than 10 feet head of water. Water level shall not drop during the period from 15 minutes before the inspection starts, through completion of the inspection. Inspect all joints for leaks.
4. Finished Plumbing Test Procedure: After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proved gas and water-tight. Plug the stack openings on the roof and building drain where it leaves the building, and introduce air into the system equal to a pressure of 1" water column. Use a "U" tube or manometer inserted in the trap of a water closet to measure this pressure. Air pressure shall remain constant without the introduction of additional air throughout the period of inspection. Inspect all plumbing fixture connections for gas and water leaks.
5. Repair all leaks and defects using new materials and retest system or portion thereof until satisfactory results are obtained.
6. Prepare reports for all tests and required corrective action.

3.12 ADJUSTING AND CLEANING

A. Clean interior of piping system. Remove dirt and debris as work progresses.

B. Clean drain strainers, domes, and traps. Remove dirt and debris.

3.13 PROTECTION

A. Protect drains during remainder of construction period, to avoid clogging with dirt and debris, and to prevent damage from traffic and construction work.

B. Place plugs in ends of uncompleted piping at end of day or whenever work stops.

END OF SECTION 22 1316

SECTION 22 4200

COMMERCIAL PLUMBING FIXTURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This section specifies plumbing fixtures and trim. The types of fixtures specified include the following:
   1. Water Closets.
   2. Lavatories (including wheelchair type).
   3. Drinking Fountains (including wheelchair type).
   4. Faucets.
   5. Fixture Supports (including wheelchair type).
   6. Toilet Seats.
   7. Fittings, Trim, and Accessories.
   8. Floor Sinks.

1.02 RELATED SECTIONS

A. Separate grab bars and toilet accessories not in integral part of plumbing fixtures and are specified in Division 10.

B. Electrical Requirements for, Water Heaters, water conditioners, and other plumbing equipment are specified in other Sections of Division 22 and Division 26.

1.03 SUBMITTALS

A. Product Data: Submit Product Data and installation instructions for each fixture, faucet, specialties, accessories, and trim specified; clearly indicate rated capacities of selected models of water coolers, and water heaters.

B. Shop Drawings: Submit rough-in drawings. Detail dimensions, rough-in requirements, required clearances, and methods of assembly of components and anchorages. Coordinate requirements with Architectural Woodwork shop drawings specified in Division 06 for fixtures installed in countertops and cabinets. Furnish templates for use in woodwork shop.

C. Wiring Diagrams: Submit manufacturer's electrical requirements and wiring diagrams for power supply to units. Clearly differentiate between portions of wiring that are factory installed and field installed portions.

D. Maintenance Data: Include data in Maintenance Manual specified in Division 01 and Section 22 05 00.

E. Quality Control Submittals:
   1. Submit certification of compliance with specified ANSI, UL, and ASHRAE Standards.
   2. Submit certification of compliance with performance verification requirements specified in this Section.

1.04 QUALITY ASSURANCE

A. Codes and Standards:
   1. California Building Code 2022, Title 24, Part 2 for Accessibility Requirements.
      a. Plumbing fixtures and accessories provided in a toilet room or bathing room required to comply with **CBC Section 11B-213.2** shall comply with **CBC Section 11B-213.3.**
      b. Effective March 1, 2017, all single-user toilet facilities shall be identified as Gender-Neutral facilities by a door symbol that complies with **CBC Sections 11B-216.8** and **11B-703.7.2.6.3.** No pictogram, text or braille is required on the symbol. If tactile jamb signage is provided, the signage shall comply with the appropriate technical requirements of **CBC Section 11B-703.**
      c. Examples of appropriate designations are “ALL-GENDER RESTROOM”, “RESTROOM” or “UNISEX RESTROOM”. DSA BU 17-01.
      d. Accessible plumbing fixtures shall comply with all the requirements in **CBC Chapter 11B, Division 6.**
      e. Clearance around accessible water closets and in toilet compartments shall be 60 inches minimum measured perpendicular from the side wall and 56 inches minimum measured perpendicular from the rear wall per **CBC Section 11B-604.3.1.**
      f. Heights and location of all accessible plumbing fixtures and components shall be mounted according to **CBC Section 11B-602 through 11B-612.**
      g. Accessible fixture controls shall comply with **CBC Sections 11B-602.3** for drinking fountains, **11B-604.6** for water closets, **11B-604.9.5** for children’s water closets, **11B-605.4** for urinals, **11B-606.4** for lavatories and sinks, **11B-607.5** for bathtubs, **11B-608.5** for showers, and **11B-611.3** for washing machines and clothes dryers.
      h. Accessible lavatories and sinks shall be mounted with the front of the higher of the rim or counter surface 34” maximum above the finish floor or ground. Depth of lavatories or sinks shall not interfere with knee and toe clearance provided in accordance with **CBC Section 11B-306** when a forward approach is required. **CBC Sections 11B-606.3 and 11B-606.7.**

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store fixtures where environmental conditions are uniformly maintained within the manufacturer's recommended temperatures to prevent damage.

B. Store fixtures and trim in the manufacturer's original shipping containers. Do not stack containers or store in such a manner that may cause damage to the fixture or trim.

C. Clearance around accessible water closets and in toilet compartments shall be 60 inches minimum measured perpendicular from the side wall and 56 inches minimum measured perpendicular from the rear wall per **CBC Section 11B-604.3.1.**

1.06 SEQUENCE AND SCHEDULING

A. Schedule rough-in installations with the installation of other building components.

1.07 MAINTENANCE

A. Extra Stock: Furnish special wrenches and other devices necessary for servicing plumbing fixtures and trim to Owner with receipt in a quantity of one device for each 10 fixtures.

B. Repair Kits: Furnish faucet repair kits complete with all necessary washers, springs, pins, retainer packings, O-rings, sleeves, and seats in a quantity of 1 kit for each 40 faucets.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer uniformity shall be as specified in Section 22 05 00: "Common Work Results for Plumbing."

B. The following specification mentions manufacturers to establish a standard quality. The following fixtures and accessories are acceptable, if used throughout:
   1. Water Closets, Urinals, Lavatories, Service Sinks:
      a. Kohler Co.
      b. American Standard.
   2. Stainless Steel Sinks:
      a. Elkay Mfg. Co.
      b. Just Mfg. Co.
   3. Faucets:
      a. Chicago Faucet Co.
   4. Flush Valves:
      a. Sloan Valve Co.
   5. Water Closet Seats:
      a. Church Products
   6. Fixture Supports:
      a. Jay R. Smith Manufacturing Co.
      b. Josam Mfg. Co.
      c. Zurn Industries, Inc.; Hydromechanics Div.
   7. Drains:
      a. Jay R. Smith Manufacturing Co.
      b. Josam Mfg. Co.
      c. Zurn Industries, Inc.; Hydromechanics Div.

2.02 FIXTURES

A. Plumbing fixture trim and exposed supplies and wastes are to be brass with polished chromium plated finish unless otherwise specified. Provide individual lose key or screwdriver stops for all fixture supplies. Separately trap all wastes. Furnish chrome plated wall escutcheons for all exposed supplies and trap arms. Locate stops below fixtures or countertops. All fixtures for use by the disabled shall have exposed hot water pipe and tailpiece and trap insulated with 1/2" rubber foam insulation.

B. All plumbing fixture faucets submitted for review shall have identification label or certification showing compliance with California Title 24, Part 5, Article 1, "Energy Conservation Standards"; Article 1, T20-1406; Article 2, T20-1525 and Article 4, 1604, and 1606.

C. Provide fixtures as scheduled on plumbing drawings and requirements of this Section.

2.03 SINK FAUCET

A. Description: General Service faucet. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
   1. Maximum Flow Rate: 1.5 GPM.

2.04 LAVATORY FAUCET

A. Description: General Service faucet. Include hot- and cold-water indicators as occurs; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.

1. Maximum Flow Rate: 0.35 GPM.

2.05 FLUSHOMETER

A. Description: Flushometer for urinal and water-closet]-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
   1. Consumption for Urinal: 0.125 gal./flush.
   2. Consumption for Water closet: 1.28 gal./flush.

2.06 WATER CLOSET

A. Description Accessible floor-mounting, floor-outlet, vitreous-china fixture designed for tank operation.
   1. Style: Flush tank.
      a. Design Consumption: 1.28 gal./flush.

2.07 FIXTURE SUPPORTS

A. Lavatory Supports: Adjustable cast iron, with thin concealed arms and sleeves, and complete with escutcheons and mounting fasteners.

2.08 ESCUTCHEONS

A. Select one of the two options below:
   1. Chrome-plated cast brass with set screw.
   2. Chrome-plated sheet steel with friction clips.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify all dimensions by field measurements. Verify that all plumbing fixtures may be installed in accordance with pertinent codes and regulations, the original design, and the referenced standards.

B. Examine rough-in for potable water and waste piping systems to verify actual locations of piping connections prior to installing fixtures.

C. Examine walls, floors, and cabinets for suitable conditions where fixtures are to be installed.

D. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF FIXTURES

A. Install plumbing fixtures level and plumb, in accordance with fixture manufacturer's written instructions, rough-in drawings, and pertinent codes and regulations, the original design, and the referenced standards.

B. Comply with the installation requirements of the 2022 California Building Code "CBC" Division 6 for accessible plumbing fixtures. Reference Article 1.04, A.,1., a. thru g. of this Section.

C. Fasten plumbing fixtures securely to supports or building structure. Secure supplies behind or within wall construction to provide rigid installation.

D. Securely attach wall hung fixtures to a 3/8-inch x 6 inch wide steel plate. Steel plate to extend at least one stud beyond first and last mounting point. Drill and tap plate at time of installation of fixture or fixture hanger. Support fixture hanger with 1/2" diameter threaded studs, jamb nuts, C.P. Acorn nuts and completely free of wall by means of a second set of jamb nuts. Weld plate to each metal stud crossed by means of a continuous vertical fillet weld and same size as stud thickness. Secure plate to each wood stud crossed by securely bolting to each stud crossed with two 1/2-inch steel bolts, 4-inch center with 1/8-inch maximum x 1-1/2 inch steel back up plates. Notch studs to set plate flush with surface.

E. Set mop basins in a leveling bed of cement grout.

F. Install a stop valve in an accessible location in the water connection to each fixture.

G. Install chrome plated brass escutcheons at each wall, floor, and ceiling penetration in exposed finished locations and with cabinets and millwork.

H. Seal fixtures to walls and floors using silicone sealant as specified in Section 07 90 00. Match sealant color to fixture color.

I. Provide abrasive washers under all single drilling deck mounted trim.

3.03 INSTALLATION OF FLOOR DRAINS

A. Install floor drains in accordance with manufacturer's written instructions and in locations indicated.

B. Install floor drains at low points of surface areas to be drained, or as indicated. Set tops of drains flush with finished floor.

C. Set drain elevation depressed below finished slab elevation as listed below to provide proper slope to drain:

Depression (Inch)	Radius Of Area Drained (Feet)
1/2	5
3/4	10
1	15
1-1/4	20
1-1/2	25

D. Trap all drains connected to the sanitary sewer.

E. Install drain flashing collar or flange so that no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes, where penetrated.

F. Position drains so that they are accessible and easy to maintain.

3.04 FIELD QUALITY CONTROL

A. Test fixtures to demonstrate proper operation upon completion of installation and after units are water pressurized. Replace malfunctioning units, then retest.

B. Inspect each installed unit for damage. Replace damaged fixtures.

3.05 ADJUSTING

A. Adjust water pressure at drinking fountains, faucets, shower valves, and flush valves to provide proper flow and stream.

B. Replace washers or leaking or dripping faucets and stops.

C. Clean fixtures, trim, and strainers using manufacturer's recommended cleaning methods and materials.

3.06 CLEANING

A. Clean fixtures, trim, and strainers using manufacturer's recommended cleaning methods and materials.

3.07 PROTECTION

A. Provide protective covering for installed fixtures, water coolers, and trim.

B. Do not allow use of fixtures for temporary facilities unless expressly approved in writing by Owner.

3.08 MOUNTING HEIGHTS SCHEDULE

Fixture	Mounting Height
Accessible Water Closet	See Architectural Drawings
Accessible Lavatory / Sink	See Architectural Drawings
Accessible Water Cooler	See Architectural Drawings

3.09 ROUGH-IN FOR FIXTURES

A. Rough-in for all fixtures and/or equipment as shown on any drawings, including the architectural drawings, which forms a part of the contract documents. This shall include all fixtures and equipment shown and/or noted as N.I.C. (not in contract) or as U.O.S. (furnished under another section of the specification). Stub out all piping to the exact location of the fixtures and set symmetrical with the fixture. Stub out for fixture supply pipes with drop ear fittings secured to stud or backing plate. Stub out two pipe diameter and terminate with pipe cap. When liens are indicated as capped or plugged at floor level, plug flush with the finished floor.

END OF SECTION

SECTION 22 0500

COMMON WORK RESULTS FOR PLUMBING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Project Specification, apply to this and the other sections of Division 22.

B. This Division is an integrated whole comprising interrelated and interdependent Section and shall be considered in its entirety in determining requirements of the Work.

C. Refer to other sections of this Division for additional requirements or information regarding the subjects of this Section.

1.02 SECTION INCLUDES

A. This Section includes general administrative and procedural requirements for plumbing installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 01:
   1. Submittals.
   2. Coordination drawings.
   3. Record documents.
   4. Maintenance manuals.
   5. Rough-in.
   6. Mechanical installations.
   7. Cutting and patching.

1.03 SUBMITTALS

A. General: Follow the procedures specified in Division 01.

B. Plumbing submittals shall include shop drawings, product data, and samples per requirements of each section of the specifications.

C. Plumbing Submittals and Product Data: Assemble “submittals” and “product data” into tabbed brochures according to main areas of work.
   1. Assemble each brochure with tabbed separators for each Specification Section where products are noted to be submitted, with separate tabs for each product listed.
   2. Temperature "control shop drawings" may be submitted separately after preparations for review.
   3. For items such as valves, hangers and accessories, indicate specific items and where they are to be used.
   4. Contractor need only to submit for review those items specified to be submitted, unless requested by the Architect for special review.

D. All submittals shall be submitted in hard copy, electronic submittals are not acceptable.

E. Increase the number of plumbing related submittals including shop drawings, product data, and samples submitted to allow for required distribution by one additional copy, which will be retained by the Mechanical Consulting Engineer.

F. Submit for review, only the specific items required in this Section or other Sections of Division 22.

G. Additional submittals shall include, but not limited:
   1. Equipment data record drawings.
   2. Certification of completion of testing.
   3. Certification of completion of operation instructions.
   4. Operating instruction brochure.
   5. Maintenance instruction brochures.
   6. Equipment guarantees.
   7. 1/4" = 1'-0" or larger scale layouts of "Equivalent" equipment or "Or Approved Equal" equipment.
   8. Coordination Drawings, where requested or required.

H. Submittal materials will be reviewed for substantial conformity with the intent of the contract plans and specifications only. Such review does not indicate approval of dimensions, quantities, coordination with other trades, or work methods of the contractor, which are indicated thereon.

I. Additional copies may be required by individual sections of these specifications.

1.04 COORDINATION

A. The Contractor shall be totally responsible for coordinating the layout of all building elements to avoid conflict of the work of the structural, mechanical, electrical systems, and architectural features of the building.

B. The cost of any extra work of any kind caused by a conflict due to this lack of coordination shall be borne by the Contractor.

1.05 COORDINATION OF DRAWINGS

A. Prepare coordination drawings in accordance with requirements of Project Specification to a scale of 1/4" = 1'-0" or larger; detailing major elements, components, required clearances, and systems of plumbing equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of the installations are of importance to the efficient flow of the Work, including but not necessarily limited to the following:
   1. Indicate the proposed locations of piping, fixtures, equipment, and materials. Include the following:
      a. Clearances for servicing and maintaining equipment, including tube removal, filter removal, and space for equipment disassembly required for periodic maintenance.
      b. Equipment for connections and support details.
   2. Prepare reflected ceiling plans to coordinate and integrate installations with other systems and components, such as, ductwork, air outlets and inlets, light fixtures, communication systems components, sprinklers, and other ceiling-mounted items.

B. Submittal of "Or Equal" substitutions of equipment will not be reviewed unless accompanied by coordination drawings.

1.06 RECORD DOCUMENTS

A. Prepare record documents in accordance with the requirements of project specification. In addition to the requirements of project specification, indicate the following installed conditions:
   1. Record drawings of all installed systems as specified in project specification including the locations and invert elevations of underground installations.

1.07 MAINTENANCE MANUALS

A. Prepare maintenance manuals in accordance with project specification and Division 22 Section "Supplementary Plumbing Requirements."

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, mill certification, and other information needed for identification.

1.09 EQUIVALENT EQUIPMENT

A. In these specification and drawings, whenever more than one (1) manufacturer's product is specified, the manufacturer specified on the drawings and the first named product in these specifications is the basis of design and the use of alternate-named manufacturer's product or substitutes may require modification in the design work and agency approvals. If such alternatives or substitutions are proposed by the contractor, contractor shall adhere to the following requirements;
   1. Contractor shall clearly identify all proposed alternatives or substitutions in the submittal package.
   2. The Contractor shall assume all costs required to make all necessary revisions and modifications of the contract documents resulting from the substitution or selection of an alternate manufacturer's product, including all professional fees and the cost of DSA approval.
   3. The Contractor shall assume all costs required for any additional modification to building structure, electrical and all other related construction costs resulting from the substitution or selection of an alternate manufacturer's product.

B. These specifications and/or drawings, names and specifies certain equipment in detail which are the basis of design and are explained in paragraph 1.09-A above. It also names alternate equipment by manufacturer, which is not considered to be a "substitution."

C. Submit equivalent equipment to the Architect for review per the requirements of Division 01, and Section "Supplementary Plumbing Requirements."

D. Equipment of Manufacturers named in Division 22 will be considered equivalent to that specified in detail and/or named on the drawings if:
   1. The proposed equipment is of equivalent quality, capacity.
   2. Equipment is as fully equipped, fits the space allotted, and has physical configuration and weight similar, to the equipment specified in detail.

E. A complete lay out of an equipment room or area must be submitted for equivalent equipment. Notice space limitations. Layouts to include plans and section views at a scale of not less than 1/4" = 1 ft.

F. The Architect shall determine the acceptability of "Equivalent Equipment."

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 ROUGH-IN

A. Verify final locations for rough-in with field measurements and with the requirements of the actual equipment to be connected.

3.02 MECHANICAL INSTALLATIONS

A. General: Sequence, coordinate, and integrate the various elements of plumbing systems, materials, and equipment. Comply with the following requirements:
   1. Coordinate plumbing systems, equipment, and materials installation with other building components.
   2. Verify all dimensions by field measurements.
   3. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for plumbing installations.
   4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
   5. Sequence, coordinate, and integrate installations of plumbing materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
   6. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible as required by California Building Code.
   7. Coordinate connection of plumbing system with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
   8. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect prior to commencement of installation.
   9. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.
   10. Install all plumbing equipment to facilitate servicing, maintenance, and repair or replacement of equipment components in full compliance with California Building Code and the equipment manufacturer's recommendations. If the drawings or the manufacturer does not provide a specific space requirement for servicing equipment, provide as a minimum, horizontal distance of 36" from face of equipment to opposite vertical surface.
   11. Install access panels or doors for all equipment and components which require access for adjustment and maintenance, where units are concealed behind finished surfaces.
   12. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.
   13. Any equipment located above a ceiling that has any component, which is serviceable shall be installed within 12" from the top of the ceiling.

3.03 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with project specification. In addition to the requirements specified in project specification, the following requirements apply:
   1. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.

B. Perform cutting, fitting, and patching of plumbing equipment and materials required to:
   1. Uncover Work to provide for installation of ill-timed Work.
   2. Remove and replace defective work.
   3. Remove and replace Work not conforming to requirements of the Contract Documents.
   4. Remove samples of installed Work as specified for testing.
   5. Install equipment and materials in existing structures.
   6. Upon written instructions from the Architect, uncover and restore Work to provide for Architect/Engineer observation of concealed Work.

C. Cut, remove, and legally dispose of selected plumbing equipment, components, and materials as indicated, including but not limited to removal of plumbing piping, gas lines, heating units, plumbing fixtures and trim, and other plumbing items made obsolete by the new Work.

D. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.

E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.

1. Patch existing finished surfaces and building components using experienced installers and new materials matching existing materials. For installer's qualifications refer to the materials and methods required for the surface and building components being patched.

END OF SECTION 22 0500

SECTION 23 0500

COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Project specification Sections, apply to this and the other sections of Division 23.

B. This Division is an integrated whole comprising interrelated and interdependent Section and shall be considered in its entirety in determining requirements of the Work.

C. Refer to other sections of this Division for additional requirements or information regarding the subjects of this Section.

1.02 SECTION INCLUDES

A. This Section includes general administrative and procedural requirements for HVAC installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 01:
   1. Submittals.
   2. Coordination drawings.
   3. Record documents.
   4. Maintenance manuals.
   5. Rough-ins.
   6. Mechanical installations.
   7. Cutting and patching.

1.03 SUBMITTALS

A. General: Follow the procedures specified in Division 01.

B. HVAC submittals shall include shop drawings, product data, and samples per requirements of each section of the specifications.

C. HVAC Submittals and Product Data: Assemble “submittals” and “product data” into tabbed brochures according to main areas of work i.e. (HVAC); Temperature Control; Testing, Adjusting, and Balancing.
   1. Assemble each brochure with tabbed separators for each Specification Section where products are noted to be submitted, with separate tabs for each product listed.
   2. Temperature "control shop drawings" may be submitted separately after preparations for review.
   3. For items such as valves, hangers and accessories, indicate specific items and where they are to be used.
   4. Contractor need only to submit for review those items specified to be submitted, unless requested by the Architect for special review.

D. All submittals shall be submitted in hard copy, electronic submittals are not acceptable.

E. Increase the number of HVAC related submittals including shop drawings, product data, and samples submitted to allow for required distribution by one additional copy, which will be retained by the Mechanical Consulting Engineer.

F. Submit for review, only the specific items required in this Section or other Sections of Division 23.

G. Additional submittals shall include, but not limited:
   1. Air balance reports and equipment data record drawings.
   2. Certification of completion of testing.
   3. Certification of completion of operation instructions.
   4. Operating instruction brochure.
   5. Maintenance instruction brochures.
   6. Equipment guarantees.
   7. 1/4" = 1'-0" or larger scale layouts of "Equivalent" equipment or "Or Approved Equal" equipment.
   8. Coordination Drawings, where requested or required.

H. Submittal materials will be reviewed for substantial conformity with the intent of the contract plans and specifications only. Such review does not indicate approval of dimensions, quantities, coordination with other trades, or work methods of the contractor, which are indicated thereon.

I. Additional copies may be required by individual sections of these specifications.

1.04 COORDINATION

A. The Contractor shall be totally responsible for coordinating the layout of all building elements to avoid conflict of the work of the structural, mechanical, electrical systems, and architectural features of the building.

B. The cost of any extra work of any kind caused by a conflict due to this lack of coordination shall be borne by the Contractor.

1.05 COORDINATION OF DRAWINGS

A. Prepare coordination drawings in accordance with requirements of Project Specification to a scale of 1/4" = 1'-0" or larger; detailing major elements, components, required clearances, and systems of HVAC equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of the installations are of importance to the efficient flow of the Work, including but not necessarily limited to the following:
   1. Indicate the proposed locations of piping, ductwork, equipment, and materials. Include the following:
      a. Clearances for servicing and maintaining equipment, including tube removal, filter removal, and space for equipment disassembly required for periodic maintenance.
      b. Equipment for connections and support details.
   2. Prepare reflected ceiling plans to coordinate and integrate installations with other systems and components, such as, air outlets and inlets, light fixtures, communication systems components, sprinklers, and other ceiling-mounted items.

B. Submittal of "Or Equal" substitutions of equipment will not be reviewed unless accompanied by coordination drawings.

1.06 RECORD DOCUMENTS

A. Prepare record documents in accordance with the requirements of project specification. In addition to the requirements of project specification, indicate the following installed conditions:
   1. Record drawings of all installed as specified in Division 01 the locations and invert elevations of underground installations.

1.07 MAINTENANCE MANUALS

A. Prepare maintenance manuals in accordance with Project specification and Division 23 Section "Supplementary Mechanical Requirements."

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, mill certification, and other information needed for identification.

1.09 EQUIVALENT EQUIPMENT

A. In these specification and drawings, whenever more than one (1) manufacturer's product is specified, the manufacturer specified on the drawings and the first named product in these specifications is the basis of design and the use of alternate-named manufacturer's product or substitutes may require modification in the design work and agency approvals. If such alternatives or substitutions are proposed by the contractor, contractor shall adhere to the following requirements:
   1. Contractor shall clearly identify all proposed alternatives or substitutions in the submittal package.
   2. The Contractor shall assume all costs required to make all necessary revisions and modifications of the contract documents resulting from the substitution or selection of an alternate manufacturer's product, including all professional fees and the cost of DSA approval.
   3. The Contractor shall assume all costs required for any additional modification to building structure, electrical and all other related construction costs resulting from the substitution or selection of an alternate manufacturer's product.

B. These specifications and/or drawings, names and specifies certain equipment in detail which are the basis of design and are explained in paragraph 1.09-A above. It also names alternate equipment by manufacturer, which is not considered to be a "substitution."

C. Submit equivalent equipment to the Architect for review per the requirements of Division 01, and Section "Common Work Results for HVAC."

D. Equipment of Manufacturers named in Division 23 will be considered equivalent to that specified in detail and/or named on the drawings if:
   1. The proposed equipment is of equivalent quality, capacity.
   2. Equipment is as fully equipped, fits the space allotted, and has physical configuration and weight similar-to the equipment specified in detail.

E. A complete lay out of an equipment room or area must be submitted for equivalent equipment. Notice space limitations. Layouts to include plans and section views at a scale of not less than 1/4" = 1 ft.

F. The Architect shall determine the acceptability of "Equivalent Equipment."

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 ROUGH-IN

A. Verify final locations for rough-in with field measurements and with the requirements of the actual equipment to be connected.

3.02 MECHANICAL INSTALLATIONS

A. General: Sequence, coordinate, and integrate the various elements of HVAC systems, materials, and equipment. Comply with the following requirements:
   1. Coordinate HVAC systems, equipment, and materials installation with other building components.
   2. Verify all dimensions by field measurements.
   3. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for HVAC installations.
   4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
   5. Sequence, coordinate, and integrate installations of HVAC materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
   6. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible as required by California Building Code.
   7. Coordinate connection of HVAC system with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
   8. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect prior to commencement of installation.
   9. Install systems, materials, and equipment level and plumb, parallel, and perpendicular to other building systems and components.
   10. Install all HVAC equipment to facilitate servicing, maintenance, and repair or replacement of equipment components in full compliance with California Building Code and the equipment manufacturer's recommendations. If the drawings or the manufacturer does not provide a specific space requirement for servicing equipment, provide as a minimum, horizontal distance of 36" from face of equipment to opposite vertical surface.
   11. Install access panels or doors for all equipment and components which require access for adjustment and maintenance, where units are concealed behind finished surfaces.
   12. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.
   13. Any equipment located above a ceiling that has any component, which is serviceable shall be installed within 12" of the top-of the ceiling.

3.03 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with project specification. In addition to the requirements specified in project specification, the following requirements apply:
   1. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.

B. Perform cutting, fitting, and patching of HVAC equipment and materials required to:
   1. Uncover Work to provide for installation of ill-timed Work.
   2. Remove and replace defective work.
   3. Remove and replace Work not conforming to requirements of the Contract Documents.
   4. Remove samples of installed Work as specified for testing.
   5. Install equipment and materials in existing structures.
   6. Upon written instructions from the Architect, uncover and restore Work to provide for Architect/Engineer observation of concealed Work.

C. Cut, remove, and legally dispose of selected HVAC equipment, components, and materials as indicated, including but not limited to removal of HVAC piping, refrigerant lines, heating units, and other HVAC items made obsolete by the new Work.

D. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.

E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
   1. Patch existing finished surfaces and building components using experienced installers and new materials matching existing materials. For installer's qualifications refer to the materials and methods required for the surface and building components being patched.

END OF SECTION 23 0500

SECTION 23 0529

SUPPORTS AND ANCHORS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Extent of supports and anchors required by this section is indicated on drawings or in other Division 23 sections and include the following:
   1. Horizontal-Piping Hangers and Supports.
   2. Vertical-Piping Clamps.
   3. Hanger-Rod Attachments.
   4. Building Attachments.
   5. Saddles and Shields.
   6. Miscellaneous Materials.
   7. Anchors.
   8. Equipment Supports.

1.02 RELATED SECTIONS

A. This section is part of each Division 23 sections making reference to or requiring supports and anchors specified herein.

B. Supports and anchors furnished as part of factory-fabricated equipment are specified as part of equipment assembly in other Division 23 sections.

1.03 QUALITY ASSURANCE

A. Codes and Standards:
   1. Code Compliance: Comply with applicable plumbing codes pertaining to product materials and installation of supports and anchors.
   2. UL and FM Compliance: Provide products which are UL-listed and FM approved.
   3. MSS Standard Compliance:
      a. Provide pipe hangers and supports of which materials, design, and manufacturer comply with MSS SP-58.
      b. Select and apply pipe hangers and supports, complying with MSS SP-69.
      c. Fabricate and install pipe hangers and supports, complying with
      d. MSS SP-89.
      e. Terminology used in this section is defined in MSS SP-90.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, including installation instructions for each type of support and anchor.

PART 2 - PRODUCTS

2.01 MANUFACTURED UNITS

A. Hangers and support components shall be factory fabricated of materials, design, and manufacturer complying with MSS SP-58.
   1. Components shall have galvanized coatings where installed for piping and equipment that will not have field-applied finish.

2. Pipe attachments shall have nonmetallic coating for electrolytic protection where attachments are in direct contact with copper tubing.

B. Thermal Hanger Shield Inserts: 100 PSI average compressive strength, waterproofed calcium silicate, encased with a sheet metal shield. Insert and shield shall cover entire circumference of the pipe and shall be of length indicated by manufacturer for pipe size and thickness of insulation.

2.02 HORIZONTAL PIPING HANGERS AND SUPPORTS

A. General: Except as otherwise indicated, provide factory fabricated horizontal-piping hangers and supports complying with MSS SP-58, of one of the following MSS types listed, selected by Installer to suit horizontal-piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Use only one type by one manufacturer for each piping service. Select size of hangers and supports to exactly fit pipe size for bare piping, and to exactly fit around piping insulation with saddle or shield for insulated piping. Provide copper-plated hangers and supports for copper-piping systems.
1. Adjustable Steel Clevis Hangers: MSS Type 1.
2. Adjustable Swivel Pipe Rings: MSS Type 6.

2.03 VERTICAL PIPING CLAMPS

A. General: Except as otherwise indicated, provide factory fabricated vertical-piping clamps complying with MSS SP-58, of one of the following types listed, selected by Installer to suit vertical piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Select size of vertical piping clamps to exactly fit pipe size of bare pipe. Provide copper-plated clamps for copper-piping systems.

B. Two-Bolt Riser Clamps: MSS Type 8.

2.04 HANGER ROD AND BUILDING ATTACHMENTS

A. General Hanger Rod Attachment: Refer to structural drawings for requirements of hanger rod and building attachments. If a specific attachment that is required is not detailed on the structural drawings, one of the following attachments may be submitted for review by the structural engineer prior to installation. Except as otherwise indicated, provide factory fabricated hanger-rod attachments complying with MSS SP-58, of one of the following MSS types listed, selected by Installer to suit horizontal-piping hangers and building attachments, in accordance with MSS SP-69 and manufacturer's published product information. Use only one type by one manufacturer for each piping service. Select size of hanger-rod attachment to suit hanger rods. Provide copper-plated hanger-rod attachments for copper-piping systems.

B. General Building Attachment: Except as otherwise indicated, provide factory fabricated building attachments complying with MSS SP-58, of one of the following MSS types listed, selected by Installer to suit building substrate conditions, in accordance with MSS SP-69 and manufacturer's published product information. Select size of building attachments to suit hanger rods. Provide copper-plated building attachments for copper-piping systems.
1. Concrete Inserts: MSS Type 18.
2. Center Beam Clamps: MSS Type 21.
3. Steel Beam Clamps W/Eye Nut: MS Type 28.
4. Linked Steel Clamps W/Eye Nut: MSS Type 29.
5. Malleable Beam Clamps: MSS Type 30.
6. Steel Brackets: One of the following for indicated loading:
7. Light Duty: MSS Type 31.

2.05 SADDLES AND SHIELDS

A. General: Except as otherwise indicated, provide saddles, or shields under piping hangers and supports, factory-fabricated, for all insulated piping. Size saddles and shields for exact fit to mate with pipe insulation.

B. Protection Shields: MSS Type 40; provide high density insert of same thickness of insulation.

2.06 MANUFACTURERS OF HANGERS AND SUPPORTS

A. Manufacturers: Subject to compliance with requirements, provide hangers and supports of one of the following:
   1. B-Line Systems, Inc.
   2. Tolco, Inc.
   3. Elcen Metal Products Co.
   4. Fee & Mason Mfg. Co.; Div. Figgie International.
   5. ITT Grinnel Corp.

2.07 MISCELLANEOUS MATERIALS

A. Steel Plates, Shapes and Bars: ASTM A36.

B. Cement Grout: Portland cement (ASTM C150, Type I or Type III) and clean uniformly graded, natural sand (ASTM C 404, Size No. 2). Mix at a ratio of 1.0-part cement to 3.0 parts sand, by volume, with minimum amount of water required for placement and hydration.

C. Pipe Alignment Guides: Factory fabricated, of cast semisteel or heavy fabricated steel, consisting of bolted two-section outer cylinder and base with two-section guiding spider that bolts tightly to pipe. Length of guides shall be as recommended by manufacturer to allow indicated travel.

D. Pipe Roll Stand: Factory fabricated cast iron stand, size as required, with insulation installed on piping.

2.08 ISOLATORS

A. Isolators: Provide factory-fabricated isolators of size required.

B. Spring Isolators: Refer to Section 230548 "Vibration Control for HVAC."

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine substrates and conditions under which supports and anchors are to be installed. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Proceed with installation of hangers, supports and anchors only after required building structural work has been completed in areas where the work is to be installed. Correct inadequacies including (but not limited to) proper placement of inserts, anchors, and other building structural attachment.

B. Prior to installation of hangers, supports, anchors and associated work, installer shall meet at project site with Contractor, installer of each component of associated work, inspection, and testing agency representatives (if any), installers of other work requiring coordination with work of this section and Architect/Engineer for purpose of reviewing material selections and procedures to be followed in performing the work in compliance with requirements specified.

3.03 INSTALLATION OF BUILDING ATTACHMENTS

A. Install building attachments at required locations within concrete or on structural steel for proper piping support. Space attachments within maximum piping span length indicated in MSS SP-69. Install additional building attachments where support is required for additional concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten insert securely to forms. Where concrete with compressive strength less than 2500 PSI is indicated, install reinforcing bars through openings at top of inserts.

3.04 INSTALLATION OF HANGERS AND SUPPORTS

A. General: Install hangers, supports, clamps and attachments to support piping properly from building structure; comply with MSS SP-69. Arrange for grouping of parallel runs of horizontal piping to be supported together on trapeze type hangers where possible. Install supports with maximum spacings complying with MSS SP-69. Where piping of various sizes is to be supported together by trapeze hangers, space hangers for smallest pipe size or install intermediate supports for smaller diameter pipe. Do not use wire or perforated metal to support piping, and do not support piping from other piping.

B. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories. Except as otherwise indicated for exposed continuous pipe runs, install hangers, and supports of same type and type as installed for adjacent similar piping.

C. Prevent electrolysis in support of copper tubing by use of hangers and supports which are copper plated, or by other recognized industry methods.

D. Provisions of Movement: Install hangers and supports to allow controlled movement of piping systems and to permit freedom of movement between pipe anchors.

E. Load Distribution: Install hangers and supports so that piping live and dead loading and stresses from movement will not be transmitted to connected equipment.

F. Pipe Slopes: Install hangers and supports to provide required pipe slopes, and so that maximum pipe deflections allowed by ANSI B31 Pressure Piping Codes are not exceeded.

G. Bare Piping: Install isolators for all bare domestic water and bare hydronic piping.

H. Insulated Piping: Comply with the following installation requirements.
   1. Clamps: Attach clamps, including spacers (if any), to piping with clamps projecting through insulation; do not exceed pipe stresses allowed by ANSI B31.
   2. Shields: Where low-compressive-strength insulation or vapor barriers are indicated on cold or chilled water piping, install coated protective shields. Provide rigid insulation reinforcement at shields.

I. Hangers and supports to be capable to resist the minimum seismic forces indicated in drawings.

3.05 EQUIPMENT SUPPORTS

A. Concrete housekeeping bases will be provided as work of Division 03.

B. Furnish to Contractor, scaled layouts of all required bases, with dimensions of bases, and location to column center lines. Furnish templates, anchor bolts, and accessories, necessary for base construction.

3.06 ADJUSTING AND CLEANING

A. Hanger Adjustment: Adjust hangers so, as to distribute loads equally on attachments.

B. Support Adjustment: Provide grout under supports so, as to bring piping and equipment to proper level and elevations.

C. Cleaning: Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint.

D. Touch-Up Painting: Immediately after erection of anchors and supports, clean field welds and abraded areas of shop paint and paint exposed areas with same material as used for shop painting to comply with SSPC-PA-1 requirements for touch-up of field-painted surfaces.
   1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

E. For galvanized surfaces clean welds bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION 23 0529

SECTION 23 3113

METAL DUCTWORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Rectangular and round metal ducts and plenums for heating, ventilating, and air conditioning system from minus 2" to plus 5" Water Gage.

1.02 RELATED SECTIONS

A. Refer to other Division 23 Sections for exterior insulation of metal ductwork; not work of this section.

B. Refer to other Division 23 Sections for ductwork accessories; not work of this section.

C. Refer to other Division 23 Sections for fans and air handling units; not work of this section.

D. Refer to other Division 23 Sections for testing, adjusting, and balancing of metal ductwork systems; not work of this section.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for metal ductwork materials and products.

B. Record Drawings: At project closeout, submit record drawings of installed metal ductwork and ductwork products, in accordance with requirements of Division 01.

C. Maintenance Data: Submit maintenance data and parts lists for metal ductwork materials and products. Include this data, product data, shop drawings, and record drawings in maintenance manual in accordance with requirements of Division 01.

1.04 QUALITY ASSURANCE

A. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects with metal ductwork systems identical to that required for this project.

B. Codes and Standards:
   1. SMACNA Standards: Comply with SMACNA "HVAC Duct Construction Standards, Metal and Flexible" for fabrication and installation of metal ductwork.
   2. ASHRAE Standards: Comply with ASHRAE Handbook, Equipment Volume, Chapter 1 "Duct Construction", for fabrication and installation of metal ductwork.
   3. NFPA Compliance: Comply with NFPA 90A "Standard for the Installation of Air Conditioning and Ventilating Systems" and NFPA 90B "Standard for the Installation of Warm Air Heating and Air Conditioning Systems."

C. Field Reference Manual: Have available for reference at project field office, copy of SMACNA "HVAC Duct Construction Standards, Metal and Flexible."

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protection: Protect shop-fabricated and factory-fabricated ductwork, accessories and purchased products from damage during shipping, storage, and handling. Prevent end damage and prevent dirt and moisture from entering ducts and fittings.

B. Storage: Where possible, store ductwork inside and protect from weather. Where necessary to store outside, store above grade and enclose with waterproof wrapping.

PART 2 - PRODUCTS

2.01 DUCTWORK MATERIALS

A. Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting.

B. Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel complying with ASTM A653/A653M, lock forming quality, with G90 zinc coating in accordance with ASTM A653/A653M; and mill phosphatized for exposed locations.

2.02 MISCELLANEOUS DUCTWORK MATERIALS

A. General: Provide miscellaneous materials and products of types and sizes indicated or, where not otherwise indicated, provide type and size required to comply with ductwork system requirements including proper connection of ductwork and equipment.

B. Fittings: Provide radius type fittings fabricated of multiple sections with maximum 18-degree change of direction per section. Unless specifically detailed otherwise, use 45-degree laterals and 45-degree elbows for branch takeoff connections. Where 90-degree branches are indicated, provide conical type tees.

C. Screws and bolts shall be cadmium plated.

D. Duct Liner: Permacote Linacoustic (rectangular), Permacote Spiracoustic (Round), complying with Thermal Insulation Manufacturer's Association (TIMA) AHC-101; of thickness indicated. 1 inch thick; 2" thick above roofline, unless indicated otherwise. Or approved equal.

E. Duct Liner Adhesive: Comply with ASTM C 916 "Specifications for Adhesives for Duct Thermal Insulation". Adhesive used on the project shall meet the requirements of CalGreen Section 5.504.4.1.

F. Duct Liner Fasteners: Comply with SMACNA HVAC Duct Construction Standards, Article S2.11.

G. Duct Sealant: Non-hardening, non-migrating mastic, or liquid elastic sealant, type applicable for fabrication/installation detail, as compounded, and recommended by manufacturer specifically for sealing joints and seams in ductwork. Sealant used on the project shall meet the requirements of CalGreen Section 5.504.4.1.

H. Duct Cement. Non-hardening migrating mastic or liquid neoprene based cement, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for cementing fitting components, or longitudinal seams in ductwork. Cement used on the project shall meet the requirements of CalGreen Section 5.504.4.1.

I. Ductwork Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork.

J. Flexible ducts: Manufacturer based upon Casco Model Silent Flex II. Equal products by Thermaflex or approved equal. Insulated flexible ductwork shall be a factory fabricated assembly composed of a high carbon spring steel wire with a non-corrosive zinc coating spiral helix permanently bound to a spun-bonded nonwoven nylon interior liner, and supporting a fiberglass insulating blanket with a polyethylene jacket vapor barrier. Working pressure: + 1-1/2” W.G. minimum, complying with UL 181; with factory installed metal collar connectors, maximum length 6 feet. Suspend at maximum 3’-0” O.C.

K. Under slab Ducts: For ductwork placed in concrete slabs, or under slabs on grade, fabricate ductwork of one of the following materials:
1. Galvanized Steel.

2.03 FABRICATION

A. Shop-fabricate ductwork in 4, 8, 10 or 12-ft lengths, unless otherwise indicated or required to complete runs. Preassemble work in shop to greatest extent possible, so as to minimize field assembly of systems. Disassemble systems only to extent necessary for shipping and handling. Match-mark sections for reassembly and coordinated installation.

B. Shop-fabricate ductwork of gages and reinforcement complying with SMACNA "HVAC Duct Construction Standards.” Ducts shall be fabricated of galvanized sheet metal no less than 24 gauge.

C. Fabricate duct fittings to match adjoining ducts, and to comply with duct requirements as applicable to fittings. Except as otherwise indicated, fabricate elbows with center-line radius equal to associated duct width; and fabricate to include turning vanes in elbows where shorter radius is necessary. Limit angular tapers to 30 degrees for contracting tapers and 20 degrees for expanding tapers.

D. Fabricate ductwork with accessories installed during fabrication to the greatest extent possible. Refer to Division 23 Section "Ductwork Accessories" for accessory requirements.

E. Fabricate ductwork with duct liner in each section of duct where indicated. Laminate liner to internal surfaces of duct in accordance with instructions by manufacturers of lining and adhesive, and fasten with mechanical fasteners.

2.04 FACTORY FABRICATED LOW PRESSURE DUCTWORK

A. General: At Installer's option, provide factory-fabricated duct and fittings, in lieu of shop-fabricated duct, and fittings.

B. Material: Galvanized sheet steel complying with ASTM A517, lock forming quality, with ASTM A525, G90 zinc coating, mill phosphatized.

C. Gage: 24-gage minimum for round and oval ducts and fittings, 4" through 24" diameter.

D. Elbows: One-piece construction for 90 degrees and 45 deg. elbows 14" and smaller. Provide multiple gore construction for larger diameters with standing seam circumferential joint.

E. Divided Flow Fittings: 90-deg. tees, constructed with saddle tap spot welded and bonded to duct fitting body.

F. Manufacturers: Subject to compliance with requirements, provide factory-fabricated ductwork of one of the following or equal:
   1. Semco Mfg., Inc.
   2. United Sheet Metal Div. United McGill Corp.
   3. Or approved equal.

PART 3 - EXECUTION

3.01 INSPECTION

A. General: Examine areas and conditions under which metal ductwork is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.02 INSTALLATION OF METAL DUCTWORK

A. General: Assemble and install ductwork in accordance with recognized industry practices which will achieve air-tight (5% leakage for systems rated 3" and under; 1% for systems rated over 3") and noiseless (no objectionable noise) systems capable of performing each indicated service. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type, which will hold ducts true-to-shape, and to prevent buckling. Support vertical ducts at every floor.

B. Field Fabrication: Complete fabrication of work at project as necessary to match shop-fabricated work and accommodate installation requirements.

C. Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Locate runs as indicated by diagrams, details and notations or, if not otherwise indicated, run ductwork in shortest route which does not obstruct useable space or block access for servicing building and its equipment. Hold ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearance to 1/2" where furring is shown for enclosure or concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically shown. Coordinate layout with suspended ceiling and lighting layouts and similar finished work.

D. Electrical Equipment Spaces: Do not route ductwork through transformer vaults and their electrical equipment spaces and enclosures.

E. Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct. Overlap opening on 4 sides by at least 1-1/2". Fasten to duct and substrate.

F. Where ducts pass through fire-rated floors, walls, or partitions, provide fire stopping between duct and substrate.

G. Coordination: Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls, and other associated work of ductwork system.

H. Installation: Install metal ductwork in accordance with SMACNA HVAC Duct Construction Standards.

3.03 INSTALLATION OF DUCT LINER

A. General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards.

3.04 INSTALLATION OF FLEXIBLE DUCT

A. Maximum Length: For any duct run using flexible ductwork, do not exceed 8'-0" extended length.

B. Installation: Install in accordance with Section III of SMACNA "HVAC Duct Construction Standards, Metal and Flexible."

C. Bends in flexible ducts shall have a radius of not less 1.5 times the internal diameters.

3.05 EQUIPMENT CONNECTIONS

A. General: Connect metal ductwork to equipment as indicated; provide flexible connection for each ductwork connection to equipment mounted on vibration isolators, and/or equipment containing rotating machinery. Provide access doors as indicated.

3.06 ADJUSTING AND CLEANING

A. Clean ductwork internally, unit by unit as it is installed, of dust and debris. Clean external surfaces of foreign substances, which might cause corrosive deterioration of metal or, where ductwork is to be painted, might interfere with painting or cause paint deterioration.

B. Temporary closure: At ends of ducts which are not connected to equipment or air distribution devices at time of ductwork installation, or the period of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, provide temporary closure of duct openings and protection of mechanical equipment during construction. All duct and other related air distribution component openings shall be covered with polyethylene film, tape, plastic, sheet metal or other methods acceptable to the enforcing agency which will prevent entrance of dust and debris.

C. Balancing: Refer to Division 23 Section "Testing, Adjusting and Balancing" for air distribution balancing of metal ductwork; not work of this section. Seal any leaks in ductwork that become apparent in balancing process.

END OF SECTION 23 3113

SECTION 23 3300

DUCTWORK ACCESSORIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Types of ductwork accessories required for project include the following:
   1. Dampers.
   2. Low pressure manual dampers.
   3. Control dampers.
   4. Counterbalanced relief dampers.
   5. Fire and smoke dampers.
   6. Turning vanes.
   7. Duct hardware.
   8. Duct access doors.
   9. Flexible connections.

1.02 RELATED SECTIONS

A. Refer to other Division 23 Sections for testing, adjusting, and balancing of ductwork accessories; not included in work of this section.

B. Division 23 Section "Metal Ductwork."

C. Division 23 Section "HVAC Identification."

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data for each type of ductwork accessory, including dimensions, capacities, and materials of construction; and installation instructions.

1.04 QUALITY ASSURANCE

A. Codes and Standards:
   1. SMACNA Compliance: Comply with applicable portions of SMACNA "HVAC Duct Construction Standards, Metal and Flexible".
   2. Industry Standards: Comply with ASHRAE recommendations pertaining to construction of ductwork accessories, except as otherwise indicated.
   3. UL Compliance: Construct, test, and label fire dampers in accordance with UL Standard 555 "Fire Dampers and Ceiling Dampers".
   4. Fire dampers shall bear California State Fire Marshal Listing Number.
   5. NFPA Compliance: Comply with applicable provisions of NFPA 90A "Air Conditioning and Ventilating Systems", pertaining to installation of ductwork accessories.

PART 2 - PRODUCTS

2.01 DAMPERS

A. Low Pressure Manual Dampers: Provide dampers of single blade type of multi-blade type, constructed in accordance with SMACNA "HVAC Duct Construction Standards". "Jiffy" type dampers are not acceptable.

2.02 BACKDRAFT DAMPERS

A. General: Provide back-draft dampers of types and sizes indicated. Construct casings of 0.090-thickness aluminum with mitered corners.

B. Blades, 0.025" formed aluminum with extruded vinyl edge seals. Bearings, Zytel. Linkage 1/8" x 1/8" aluminum tie bars concealed in frame.

C. Counterbalance: Zinc plated bar on blades (except top blade). Adjustable for final setting Mill finish

D. Manufacturers: Subject to compliance with requirements, provide dampers of one of the following:
   1. Ruskin Manufacturing Co.
   2. Air Balance Co.
   3. Pottorff Company, Inc.

E. Control Dampers: Refer to Division 23 section "Sequence of Operation" for control dampers; not work of this section.

F. Counterbalanced Relief Dampers: Provide dampers with parallel blades, counterbalanced and factory-set to relieve at indicated static pressure. Construct blades of 16-ga aluminum provide 1/2" diameter ball bearings, 1/2" diameter steel axles spaced on 9" centers. Construct frame of 2" x 1/2" x 1/8" steel channel for face areas 25 sq. ft. and under; 4" x 1-1/2" x 16-ga channel for face areas over 25 sq. ft. Provide galvanized steel finish on frame with aluminum touch-up.

G. Manufacturer: Subject to compliance with requirements, provide dampers of one of the following:
   1. Air Balance, Inc.
   2. Ruskin Mfg. Co.
   3. Pottorff Company, Inc.

2.03 FIRE AND SMOKE DAMPERS

A. California State Fire Marshal approved, designed, and constructed in accordance with NFPA 90A and UL Standard 555 and bear stamp showing compliance.

B. Fire Dampers: Provide fire dampers, of types and sizes indicated. Construct casings of 11-ga galvanized steel. Provide fusible link rated at 160 to 165 deg. F. (71 to 74 degrees C.) unless otherwise indicated. Provide damper with positive lock in closed position, and with the following additional features.
   1. Damper Blade Assembly: Curtain type.

C. Manufacturer: Subject to compliance with requirements, provide fire and smoke dampers of one of the following:
   1. Air Balance, Inc.
   2. Ruskin Mfg. Co.
   3. Pottorff Company, Inc.

2.04 TURNING VANES

A. Manufactured Turning Vanes: Provide turning vanes constructed of 1-1/2" wide curved blades set at 3/4" O.C., supported with bars perpendicular to blades set at 2" O.C., and set into side strips suitable for mounting in ductwork.

B. Acoustic Turning Vanes: Provide acoustic turning vanes constructed of airfoil shaped aluminum extrusion with perforated faces and fiberglass fill.

C. Manufacturer: Subject to compliance with requirements, provide turning vanes of one of the following:
   1. Aero Dynen Co.
   2. Airsan Corp.
   3. Anemostat Products Div.; Dynamics Corp. of America
   4. Barber-Colman Co.
   5. Duro Dyne Corp.
   6. Environmental Elements Corp. Subs, Koppers Co., Inc
   7. Hart & Cooley Mfg. Co.
   8. Register & Grille Mfg. Co., Inc.
   9. Souther, Inc.

2.05 DUCT HARDWARE

A. General: Provide duct hardware, manufactured by one manufacturer for all items on project, for the following:
   1. Test Holes: Provide in ductwork at fan inlet and outlet, and elsewhere as indicated, duct test holes, consisting of slot and cover, for instrument tests.
   2. Quadrant Locks: Provide for each damper, quadrant lock device on one end of shaft; and end bearing plate on other end for damper lengths over 12". Provide extended quadrant locks and end extended bearing plates for externally insulated ductwork.

B. Manufacturer: Subject to compliance with requirements, provide duct hardware of one of the following:
   1. Ventfabrics, Inc.
   2. Young Regulator Co.

2.06 DUCT ACCESS DOORS

A. General: Provide duct access doors where required.

B. Construction: Construct of same or greater gage as ductwork served, provide insulated doors for insulated ductwork. Provide flush frames for un-insulated ductwork, extended frames for externally insulated duct.

C. Provide one side hinged and other side with one handle-type latch for doors 12" high and smaller, 2 handle-type latches for larger doors.

D. Manufacturer: Subject to compliance with requirements, provide duct access doors of one of the following:
   1. Air Balance Inc.
   2. Duro Dyne Corp.
   3. Register & Grille Mfg. Co., Inc.
   4. Ruskin Mfg. Co.
   5. Ventfabrics, Inc.
   6. Zurn Industries, Inc.; Air Systems Div.

2.07 FLEXIBLE CONNECTORS

A. General: Provide flexible duct connections wherever ductwork connects to vibration-isolated equipment. Construct flexible connections of neoprene-coated flameproof fabric crimped into duct flanges for attachment to duct and equipment. Make airtight joint. Provide adequate joint flexibility to allow for thermal, axial, transverse, and torsional movement, also capable of absorbing vibration of connected equipment.

B. Manufacturer: Subject to compliance with requirements, provide flexible connections of one of the following:
   1. American/Elgen Co.; Energy Div.
   2. Duro Dyne Corp.
   3. Flexaust (The) Co
   4. Ventfabrics, Inc.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine areas and conditions under which ductwork accessories will be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.02 INSTALLATION OF DUCTWORK ACCESSORIES

A. Install ductwork accessories in accordance with manufacturer's installation instructions, with applicable portions of details of construction as shown in SMACNA standards, and in accordance with recognized industry practices to ensure that products serve intended function.

B. Install turning vanes in square or rectangular 90-degree elbows in supply and exhaust air systems, and elsewhere as indicated.

C. Install access doors to open against system air pressure, with latches operable from either side, except outside only where duct is too small for person to enter.

D. Coordinate with other work, including ductwork, as necessary to interface installation of ductwork accessories properly with other work.

3.03 FIELD QUALITY CONTROL

A. Operate install ductwork accessories to demonstrate compliance with requirements. Test for air leakage while system is operating. Repair or replace faulty accessories, as required to obtain proper operation and leak proof performance.

3.04 ADJUSTING AND CLEANING

A. Adjusting: Adjust ductwork accessories for proper settings, install fusible links in fire dampers and adjust for proper action.
   1. Label access doors in accordance with Division 23 Section "HVAC Identification."
   2. Final positioning of manual dampers is specified in Division 23 Section "Testing, Adjusting, and Balancing."

B. Cleaning: Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint.

3.05 EXTRA STOCK

A. Furnish extra fusible links to Owner, one link for every 10 installed of each temperature range; obtain receipt.

END OF SECTION 23 3300

SECTION 23 3423

HVAC POWER VENTILATORS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Types of power and gravity ventilators specified in this section include the following:
   1. Power ventilators.
      a. Centrifugal roof ventilators.
      b. In-Line roof ventilators.
   2. Gravity ventilators.
      a. Hooded gravity ventilators.
   3. Prefabricated roof curbs.

1.02 RELATED SECTIONS

A. Refer to Division 23 Section "Testing, Adjusting, and Balancing" for balancing of power and gravity ventilators; not work of this section.

B. Refer to Division 23 Section "Common Motor Requirements for HVAC Equipment."

C. Refer to Division 26 Sections for the following work; not included in work of this section:
   1. Power supply wiring from power source to power connection on ventilators. Include starters, disconnects, and required electrical devices, except where specified as furnished, or factory-installed, by manufacturer.

D. Refer to Division 23 Section "Vibration Control For HVAC."

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for power and gravity ventilators, including specifications, capacity ratings, dimensions, weights, materials, accessories furnished, and installation instructions.

B. Fan curve: Submit manufacturer's fan curve data for power ventilators.
   1. For belt driven equipment, submit graph of fan curve with system curve that indicates the intended point of operation. The graph shall also indicate manufacturer's recommended operating range of fan curve.
   2. For direct driven equipment with speed controller, submit graph of fan curve with system curve that indicates intended point of operation. The graph shall also indicate manufacturer's recommended operating range of fan curve. On the same graph, also provide fan curves representing maximum operating RPM and minimum operating RPM utilizing manufacturer's speed controller.
   3. For direct driven equipment, submit graph of fan curve with system curve that indicates intended point of operation. The graph shall also indicate manufacturer's recommended operating range of fan curve.

C. Shop Drawings: Submit assembly-type shop drawings showing unit dimensions, construction details, methods of assembly of components, and field connection details.

D. Wiring Diagrams: Submit manufacturer's electrical requirements for power supply wiring to power ventilators. Submit manufacturer's ladder-type wiring diagrams for interlock and control wiring. Clearly differentiate between portions of wiring that are factory-installed and portions to be field installed.

E. Maintenance Data: Submit maintenance data and parts list for each type of power and gravity ventilator, accessory, and control. Include this data, product data, shop drawings, and wiring diagrams in maintenance manual; in accordance with requirements of Division 01.

F. Exhaust fan unit equipment manufacturer shall furnish calculations showing the estimated sound power levels for each supply air, return air and unit casing radiation for each exhaust fan unit.

G. The results of the tests shall be certified by the testing agency and submitted to the Architect for approval. The report shall include the manufacturer's designation of the tested unit, a complete description of the testing conditions, the measurement procedure, and the calculated PWL values (dB re. 10-12 watts), and calculations showing how the sound power levels were obtained from test data.

1.04 QUALITY ASSURANCE

A. Codes and Standards:
1. AMCA Compliance: Provide power ventilators, which have been tested and rated in accordance with AMCA standards, and bear AMCA Certified Rating Seal.
2. UL Compliance: Provide power ventilators, which are designed, manufactured, and tested in accordance with UL 705 "Power Ventilators".
3. NEMA Compliance: Provide motors and electrical accessories complying with NEMA Standards.

PART 2 - PRODUCTS

2.01 POWER VENTILATORS

A. General: Except as otherwise indicated, provide standard prefabricated power ventilator units of type and size indicated, modified as necessary to comply with requirements and as required for complete installation.

2.02 CENTRIFUGAL ROOF VENTILATORS (EXHAUST AND SUPPLY)

A. Centrifugal Roof Ventilators: Provide centrifugal roof type, curb mounted, power ventilators of type, size, and capacity as scheduled, and as specified herein.

B. Type: Centrifugal fan, direct or belt driven as scheduled. Provide aluminum, or fiberglass weatherproof housings as scheduled. Provide square base to suit roof curb.

C. Motors: Provide permanent split-capacitor type motor for direct driven fans; capacitor-start, induction-run type motor for belt driven fans.

D. Electrical: Provide factory-wired non-fusible type disconnect switch at motor in fan housing. Provide thermal overload protection in fan motor. Provide conduit chase within unit for electrical connection.

E. Bird Screens: Provide removable bird screen, 1/2" mesh 16-ga aluminum or brass wire.

F. Dampers: Provide gravity-actuated louvered dampers in curb bases unless noted to provide motorized louvered dampers with linkage in curb base.

G. Manufacturer: Subject to compliance with requirements, provide centrifugal roof ventilators of one of the following:
   1. Cook Co., Loren.
   2. Greenheck Fan Corp.
   3. Or approved equal.

2.03 GRAVITY VENTILATORS

A. General: Except as otherwise indicated, provide standard prefabricated gravity ventilator units of type and size indicated, modified as necessary to comply with requirements, and as required for complete installation.

B. Hooded Gravity Ventilators: Provide gravity ventilators, hooded type, curb mounted, of size, type and capacity as scheduled, and as specified herein.
   1. Type: Stationary, natural draft type. Provide weatherproof housings to match power ventilators in materials and finish. Provide square or rectangular base to suit roof curb.
   2. Bird Screens: Provide removable bird screens, 1/2" mesh, 16-ga. aluminum, or brass wire.
   3. Dampers: Provide gravity-actuated louvered dampers in curb bases.
   4. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
      a. Cook Co., Loren.
      b. Greenheck Fan Corp.
      c. Or approved equal.

2.04 PREFABRICATED ROOF CURBS

A. General: Provide manufacturer's standard shop-fabricated units, modified if necessary to comply with requirements.

B. Fabricate structural framing for units of structural quality, aluminum formed to profiles indicated or, if not indicated, to manufacturer's standard profiles for coordination with roofing, insulation, and deck construction. Include 45-degree cant-strips and deck flanges with offsets to accommodate roof insulation. Weld corners and seams to form watertight units.

C. Reinforce continuous runs of over 3'-0" length by inserting welded stiffeners of heavy gage with flanges as required to provide sufficient rigidity and strength to withstand maximum lateral forces in addition to superimposed vertical loads.

D. Sloping Roof Decks: For deck slopes of 1/4" per foot and more, fabricate support units to form level top edge.

E. Gage and Height: Fabricate units of metal gage and to height above roof surface as indicated.
   1. Where gage or height is not indicated, fabricate units of 14-ga. metal, and nominal height of 14".

F. Insulate units inside structural support wall with rigid glass fiber insulation board of approximately 3-lb. density and 1-1/2" minimum thickness, except as otherwise indicated.

G. Provide support liners where shown.
   1. Use perforated metal for support liners, with approximately 1000, 3/32" diameter holes per sq. ft., to provide sound absorbing surfaces.

2. Provide sound insulation insert for curbs so indicated. Construct of 1" thick rigid fiberglass panels secured in galvanized steel framework, with rounded edges to minimize airflow resistance.

H. Manufacturer: Subject to compliance with requirements, provide prefabricated roof curbs of the same manufacturer as ventilator.

PART 3 - EXECUTION

3.01 INSPECTION

A. General: Examine areas and conditions under which power and gravity ventilators are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF POWER AND GRAVITY VENTILATORS

A. General: Except as otherwise indicated or specified, install power ventilators in accordance with manufacturer's installation instructions and recognized industry practices to ensure that products serve the intended function.

B. Coordinate ventilator work with work of roofing, walls, and ceilings, as necessary for proper interfacing.

C. Ductwork: Refer to Division 23 Section "Metal Ductwork." Connect ducts to ventilators in accordance with manufacturer's installation instructions.

D. Roof Curbs: Furnish roof curbs to roofing Installer for installation.

E. Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory-mounted. Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer.
1. Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of Division 26 Sections.
2. Verify proper rotation direction of fan wheels. Do not proceed with equipment start-up until wiring installation is acceptable to equipment installer.

F. Remove shipping bolts and temporary supports within ventilators. Adjust dampers for free operation.

3.03 FIELD QUALITY CONTROL

A. Testing: After installation of ventilators has been completed, test each ventilator to demonstrate proper operation of unit at performance requirements specified. When possible, field correct malfunctioning units, and then retest to demonstrate compliance. Replace units, which cannot be satisfactorily corrected.

3.04 ADJUSTING AND CLEANING

A. Cleaning: Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint.

3.05 SPARE PARTS

A. General: Furnish to Owner, with receipt, one spare set of belts for each belt driven power ventilator.

END OF SECTION 23 3423

SECTION 23 3700

AIR OUTLETS AND INLETS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Types of outlets and inlets required for project include the following:
   1. Linear slot diffusers and returns.
   2. Ceiling air diffusers, rectangular, square, round.
   3. Wall registers and grilles.

1.02 RELATED SECTIONS

A. Refer to other Division 23 Sections for ductwork and duct accessories required in conjunction with air outlets and inlets; not work of this section.

B. Refer to other Division 23 Sections for balancing of air outlets and inlets; not work of this section.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data for air outlets and inlets including the following:
   1. Schedule of air outlets and inlets indicating drawing designation, room location, quantity furnished, model number, size, and accessories furnished.
   2. Data sheet for each type of air outlet and inlet, and accessory furnished indicating construction, finish, and mounting details.
   3. Performance data for each type of air outlet and inlet furnished, including aspiration ability, temperature, and velocity traverses; throw and drop; and noise criteria ratings. Indicate selections on data.
   4. ANSI/ASHRAE Standard 70-1991.

B. Shop Drawings: Submit manufacturer's assembly-type shop drawing for each type of air outlet and inlet, indicating materials and methods of assembly of components.

C. Maintenance Data: Submit maintenance data, including cleaning instructions for finishes, and spare parts lists. Include this data, product data, and shop drawings in maintenance manuals; in accordance with requirements of Division 01.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver air outlets and inlets wrapped in factory-fabricated fiberboard type containers. Identify on outside of container type of outlet or inlet and location to be installed. Avoid crushing or bending and prevent dirt and debris from entering and settling in devices.

B. Store air outlets and inlets in original cartons and protect from weather and construction work traffic. Where possible, store indoors, when necessary to store outdoors, store above grade and enclose with waterproof wrapping.

1.05 QUALITY ASSURANCE

A. Codes and Standards:
   1. ANSI/ASHRAE Compliance: Test and rate air outlets and inlets in certified laboratories under requirements of ANSI/ASHRAE Standard 70-1991.

2. NFPA Compliance: Install air outlets and inlets in accordance with NFPA 90A "Standard for the Installation of Air Conditioning and Ventilating Systems."

PART 2 - PRODUCTS

2.01 CEILING AIR DIFFUSERS

A. General: Except as otherwise indicated, provide manufacturer's standard ceiling air diffusers where shown; of size, shape, capacity, and type indicated; constructed of materials and components as indicated, and as required for complete installation.

B. Performance: Provide ceiling air diffusers that have, as minimum, temperature and velocity traverses, throw and drop, and noise criteria ratings for each size device as listed in manufacturer's current data.

C. Ceiling Compatibility: Provide diffusers with border styles that are compatible with adjacent ceiling systems, and that are specifically manufactured to fit into ceiling module with accurate fit and adequate support. Refer to general construction drawings and specifications for types of ceiling systems, which will contain each type of ceiling air diffuser.

2.02 MANUFACTURER

A. Subject to compliance with requirement diffusers of one of the following:
   1. Krueger Mfg. Co.
   2. Nailor Industries, Inc.
   3. Titus Air Distribution Products.
   4. Anemostat Air Distribution Products.

B. Manufacturers and model numbers are listed and/or scheduled to set a standard of quality. Equivalent manufacturers and models accepted by Architect/Engineer may be used. Equivalents must be for review.
   1. Equivalents: Other manufacturers offering a similar product which is in accordance with the design criteria indicated may be submitted upon architect's written acceptance prior to bidding. The cost to conduct all tests as may be directed by the architect to demonstrate that the equivalent product can achieve the criteria indicated, including all travel costs, shall be borne by the submitting contractor.

2.03 LINEAR SLOT DIFFUSER AND RETURN

A. General: Provide acoustical ceiling air distribution system. Consisting of ceiling slot air diffusers, base-frames, air chambers and entry collars.

B. Air Distribution Base Frames:
   1. Linear air diffusers base frames shall mechanically lock into the grid system. The base frames shall be extruded aluminum sections. Length shall be 48" unless otherwise noted or required.
   2. Provide air distribution base frame with full supply air pattern control air weir gates. When used for return air, these air weir gates act as a return airflow control damper. Close air weir gates where return is not necessary.
   3. Base frame shall present a substantially uniform appearance through the air slot when used as supply, returns, or fully closed. All interior portions of the throat, including the vertical stems of the extrusions, shall be painted flat black to prevent unsightly visual deviations. Paint all exposed surfaces baked white enamel. Base frame shall be compatible with type of ceiling where linear slot diffuser is installed.

4. Base frame shall be provided with spacer channels located on the ceiling module. The spacer channel shall act as the support means for the adjustable full pattern control air weir gates, which are provided throughout the entire length of the base frame.
5. The noise criteria of the air distribution base frame shall be expressed in sound power levels (decibels 10-12 watts) in octave bands 2 through 7 with a room attenuation of 10 decibels and shall not exceed noise-criteria of 30. All data shall be based on tests performed in a certifiedlaboratory.
6. Where noted on drawings or as required, blank-off airtight backside of supply air linear slot where duct connection is not made.

C. Supply or Return Air Chambers:
1. Supply or Return air plenum chambers shall be designed, tested, and fabricated by the same manufacturer that furnishes the base frames. Shop fabricated air chambers not acceptable. Provide with damper at inlet to plenum, which is accessible through face of linear diffuser for adjustment.
2. Provide adjustable air pattern controllersthat are accessible through the base frame slot for field adjustment of the spread of the air stream. This will be accomplished without the removal of acoustical tile.
3. Provide a round neck air entry collar sized for maximum average air entry velocity of 750 FPM. A volume damper shall be installed at connection to plenum, which is accessible through face of diffuser for adjustment.
4. Construct supply air chamber from not less than 26-gauge galvanized steel and will be lined with one- quarter inch 2 Lbs./Cu. Ft. density thermal acoustical insulating. All surfaces visible through the slot will be painted flat black.
5. Provide spring clip keepers to securely attach the chamber to the base frame when in operation. These spring clips permit releasing of the air chamber for easy relocation.
6. The supply air chamber shall have been tested as composite assembly with the linear base frame for air distribution and noise level performance. The tests shall be conducted in accordance with ANSI/ASHRAE Standard 70-1991.
7. For return air plenums above the ceiling, install Krueger Model DFRH plenum hood on all linear return air bars.

D. Manufacturer: Krueger Model DFL linear slot diffuser.

2.04 SIDEWALL SUPPLY AND RETURN REGISTERS AND GRILLES

A. Supply register - Krueger 1600.

B. Return register - Krueger 5815.

C. Return grille - Krueger 5815.

2.05 CONSTANT AIR VOLUME SYSTEM - CEILING DIFFUSERS (SUPPLY)

A. Concealed Spline - Krueger 1240-F22.

B. Glued on Acoustile - Krueger 1240-F22.

C. Plaster or Drywall - Krueger 1240-F22.

D. 24" x 24" T-Bar - Krueger 1240-F23

Note: For 24" x 48" T-bar ceilings, coordinate with ceiling installer for auxiliary tees as required to create 24" x 24" space.

2.06 CONSTANT AIR VOLUME SYSTEM - CEILING RETURN, EXHAUST AND TRANSFER GRILLES AND REGISTERS

A. Registers shall be provided with opposed blade dampers.

B. Concealed Spline - Krueger EGC5 or EGC5-01.

C. Glued on Acoustile - Krueger EGC5 or EGC5-01.

D. Plaster or drywall - Krueger EGC5 or EGC5-01.

E. 24" x 24" T-bar - Krueger EGC5-F23 or EGC5-01-F23.

Note: For 24" x 48" T-bar ceilings, coordinate with ceiling installer for auxiliary tees as required to provide 24" x 24" space.

F. Transfer Grille - Ceiling - Same as return grilles.

2.07 VARIABLE AIR VOLUME SYSTEM - MODULAR CEILING DIFFUSERS (SUPPLY)

A. Krueger Model 1900SQ and shall have a frame style to interface with the ceiling grid system being used.

B. Manufactured from extruded aluminum. Provided with air pattern control weirs, and an integral deflection rail allowing for one- to four-way direction air flow producing uniform ceiling effect.

C. The air motion in the occupancy zone at maximum cubic feet per minute shall not exceed 50 feet per minute. Inner panel of matching acoustical tile shall provide an airtight joint.

D. Supply, Return and Exhaust Chambers:
   1. Designed and fabricated by the manufacturer of the base frames. Field fabricated chambers will not be accepted. Chamber to be supplied with spring clips to attach to the base frame. Constructed from not less than 26-gauge galvanized steel and lined with 1/4" 2 Lbs./Cu. Ft. density thermal insulation. All surfaces visible through the air slot painted flat black.
   2. Chamber shall be supplied with a factory installed round entry collar for flex duct connection. Collar shall be sized for maximum average air entry velocity of 750 FPM. Chamber must be tested as a composite assembly with the base frame for air distribution and noise level performance by a certified testing laboratory. If used with side inlet, furnish, and install vertical pressure equalizing baffle.

2.08 VARIABLE AIR VOLUME SYSTEM - MODULAR CEILING RETURN

A. Krueger Model 1900SQ Return diffuser.

B. Base frame from extruded aluminum. Frame shall have fixed weirs creating a continuous one-inch closed slot. Provide opposite blade volume damper.

2.09 VARIABLE AIR VOLUME SYSTEM - TRANSFER GRILLES

A. Krueger Model 1900SQ Return diffuser.

B. Base frame from extruded aluminum. Frame shall have fixed weirs creating a continuous one-inch closed slot. Provide opposite blade volume damper.

2.10 SUPPLY, RETURN AND EXHAUST CONNECTIONS TO METAL LINEAR CEILING

A. Air Factors sheet metal air boot (eight-slot for connecting to back of metal linear ceiling with slot openings with labyrinths, as applicable) for supply, return, and exhaust. Air boot shall lock onto back of ceiling system.

2.11 CIRCULAR CEILING DIFFUSERS

A. Krueger Model RA2 circular diffuser with adjustable inner cone.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine areas and conditions under which air outlets and inlets are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install air outlets and inlets in accordance with manufacturer's written instructions and in accordance with recognized industry practices to ensure that products serve intended function.

B. Provide 12” high plenum box with 1” acoustical insulation. Refer to installation detail on plans for additional requirements.

C. Coordinate with other work, including ductwork and duct accessories, as necessary to interface installation of air outlets and inlets with other work.

D. Coordinate ceiling air diffusers, registers, and grilles, as indicated on general construction "Reflected Ceiling Plans". Unless otherwise indicated, locate units in center of acoustical ceiling module.

E. Supply outlets to provide the required air throw and spread with no apparent drafts or excessive air movement within space being supplied. Contractor to provide necessary accessories to accomplish satisfactory air distribution.

F. Provide felt, cork or rubber gasket between finish-surface and frame to prevent vibration and assure tight fit. Contractor shall be responsible for the correct location of ductwork and outlets.

G. For filler panel type outlets, the manufacturer shall coordinate his design with the ceiling suspension system being used. The Contractor and manufacturer shall match up sizes of outlets to properly fit in ceiling systems, between concrete or masonry components, between architectural items before fabrication.

H. When installing removable core type outlets, secure to frame with screws.

I. Secure outlets to ceiling suspension systems as required by Code.

END OF SECTION 23 3700

SECTION 26 00 00-GENERAL ELECTRICAL SPECIFICATIONS

1.1 WORK INCLUDED:

A. This specification shall apply to all phases of Work hereinafter specified, shown on Drawings, or as required to provide a complete installation of electrical systems for this Project. Work required under this specification, is not limited to just the Electrical Drawings - refer to Architectural, Structural, Landscape, and Mechanical / Plumbing Drawings, as well as all other drawings applicable to this project, which designate the scope of work to be accomplished. The intent of the Drawings and Specifications is to provide a complete and operable electrical system that includes all documents that are a part of the Contract.

1. Work Included. Furnish labor, material, services and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on Drawings, and its delivery to the Owner complete in all respects ready for use.

2. The electrical Work includes installation or connection of certain materials and equipment furnished by others. Verify installation details, installation and rough-in locations from the actual equipment or from the equipment shop drawings.

B. Electrical Drawings. Electrical Drawings are diagrammatic, and are intended to convey the scope of work, indicating intended general arrangement of equipment, conduit and outlets. Follow Drawings in laying out Work and verify spaces for installation of materials and equipment based on actual dimensions of equipment furnished.

1.2 QUALITY ASSURANCE

A. Design, manufacture, testing and method of installation of all apparatus and materials furnished under requirements of these specifications shall conform to latest publications or standard rules of the following:

- Institute of Electrical and Electronic Engineers - IEEE
- National Electrical Manufacturers' Association - NEMA
- Underwriters' Laboratories, Inc. - UL
- National Fire Protection Association - NFPA
- Federal Specifications - Fed. Spec.
- American Society for Testing and Materials - ASTM
- American National Standards Institute - ANSI
- National Electrical Code - NEC
- National Electrical Safety Code - NESC
- Insulated Cable Engineers Association - ICEA
- American Institute of Steel Construction - AISC
- State and Municipal Codes In Force In The Specific Project Area
- Occupational Safety and Health Administration (OSHA)
- Electronics Industries Association/ Telecommunications Industry Association (EIA/TIA)
- California Electrical Code (where adopted)
- Local Authority Having Jurisdiction (AHJ) Published Electrical Standards and Codes

B. Perform Work in accordance with the National Electrical Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code." The Contractor shall comply with the Code including local amendments and interpretations without added cost to the Owner. Where Contract Documents exceed minimum requirements, the Contract Documents take

precedence. Where code conflicts occur, the most stringent shall apply unless variance is approved.

1. Comply with all requirements for permits, licenses, fees and codes. The Contractor, at Contractor's expense, shall obtain all permits, licenses, fees, special service costs, inspections and arrangements required for Work under this contract, unless otherwise specified.

2. Comply with requirements of the applicable utility companies serving this Project. Make all arrangements with utility companies for proper coordination of Work.

1.3 GENERAL REQUIREMENTS

A. Guarantee: Furnish a written guarantee for a period of one (1) year from date of acceptance.

B. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawing and/or Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to ensure complete and operable systems as required by the Owner and Engineer.

C. All Core Cutting, Drilling, and Patching:

1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Concrete section of the Specifications.

2. No holes will be allowed in any structural members without the written approval of the Project's Structural Engineer.

3. For penetrations of concrete slabs or concrete footings, the work shall be as directed in the Concrete Section of Specifications.

4. The Contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.

5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.

D. Verifying Drawings and Job Conditions:

1. This Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.

2. This Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment(s) shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.

1.4 WORK IN COOPERATION WITH OTHER TRADES

A. Examine the Drawings and Specifications and determine the work to be performed by the electrical, mechanical and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required

operation sequence of all electrical, mechanical and other systems or equipment.

B. Provide a conduit only system for low voltage wiring required for control of mechanical and plumbing equipment described in this or other parts of the Contract Documents. Install all control housings, conduits and backboxes required for installing conductors and wire to the controls.

C. Install separate conduits between each heating, ventilating and air conditioning sensing device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify the exact requirements from the control diagrams provided with the equipment manufacturer's shop drawings.

1.5 TESTING AND ADJUSTMENT

A. Upon completion of all electrical work, this Contractor shall test all circuits, switches, light fixtures, lighting control & dimming systems including distributed systems, motors, circuit breakers, motor starters and their auxiliary circuits and any other electrical items to ensure perfect operation of all electrical equipment.

B. Equipment and parts in need of correction and discovered during such testing, shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.

C. All circuit(s) shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.

D. All test reports, including copies of any required Energy Code Acceptance Forms (e.g. CA Title 24 Acceptance for Code Compliance Forms) should be submitted to the Engineer at completion of project.

1.6 IDENTIFICATION

A. Nameplates shall be provided for unit substations, switchgear, switchboards, distribution boards, distribution panels, panel boards, motor control centers, transformers, transfer switches, contactors, starters, disconnect switches, enclosed circuit breakers/switches, Inverters, UPSs, PDUs, RDCs, Lighting Control Panels, Dimming Panels, Door Releasing System Panels, Fire Alarm / Central Monitoring terminal cabinets/power supplies/control panels, and all low voltage system terminal & control cabinets. Nameplate inscriptions shall be identical to the equipment designations indicated in plans and specifications.

All circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDU output circuit breakers and motor control centers shall have individual nameplates located immediately adjacent to the respective device. Nameplate inscription shall identify the downstream equipment or device served by the circuit breaker or fuse.

Nameplates for contactors, starters, disconnect switches, and enclosed circuit breakers shall be engraved with the device designation/identification on the top line, source identification for the device on the 2nd line and load designation for the device on the bottom line. Where device designation is not indicated on plans/specifications, Contractor shall submit a written clarification request to the Engineer.

B. Identification nameplates, UON, shall be laminated 1/8" thick micarta with beveled edges and engraved white letters 3/8" high, minimum, on 1-1/2" high black background for single line of text. Where two lines of text are required, provide min. 2" high nameplate. Where three lines of text are required, provide min. 2.5" high nameplate.

C. Identification nameplates for new switchgear, switchboards, distribution boards, distribution panels, panel boards & motor control centers shall be attached with switchgear manufacturer-provided screws via switchgear manufacturer factory pre-drilled holes. A factory option to rivet identification nameplates to the equipment is only acceptable if screw-fastened nameplates are not an available option from the switchgear manufacturer. Field drilling or other mechanical attachment methods that change/void the NEMA or NTRL rating of the enclosure are strictly forbidden.

D. Identification nameplates for transformers, transfer switches, disconnect switches, enclosed circuit breakers/switches, Inverters, UPSs, PDUs, RDCs, Lighting Control Panels, Dimming Panels, Door Releasing System Panels, Terminal cabinets and all circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDUs, PDU output circuit breakers, and motor control centers shall be attached to the equipment by self-adhesive backing integral to the nameplates. When equipment is located outdoors, provide nameplates without self-adhesive backing and attach to equipment using weather-rated, UV-resistant epoxy. In all cases, clean surfaces before applying identification nameplates parallel to equipment lines.

E. Warning Placards, as required by General Single Line Diagram Notes for multiple power sources, or Instruction Placards, as required for all kirk-key interlock schemes, all UPS bypass procedures or as required elsewhere in the plans/specifications shall be self-adhesive, 1/8" thick micarta with beveled edges, engraved 1/2" high white lettering on a Red background. Warning/Instruction Placards shall be attached to the face of the equipment directly related to the placards. Provide a formal placard submittal for review by the Engineer prior to ordering any Warning/Instruction Placards. In all cases, clean surfaces before applying Warning/Instruction Placards parallel to equipment lines.

F. Receptacles that are part of a UL-listed under floor computer room whip assembly, ceiling and/or cable/ladder tray-mounted receptacles used in lab, manufacturing, commercial kitchen environments or that are serving telcom/data/av racks & cabinets shall have identification nameplates located on the wiring device plate cover. Nameplates shall be self-adhesive, 1/8" thick micarta with beveled edges, engraved 1/4" high white lettering on black background with serving power source, circuit identification and NEMA/IEC receptacle type. Use of two (2) separate nameplates per device plate cover is acceptable. Affix nameplates to be visible when plugs are occupying receptacles.

G. See wiring device section of this specification for additional wiring device plate cover labeling requirements.

H. See drawings for panel board schedule directory installation requirements.

I. See conduit installation section of this specification for conduit labeling requirements.

1.7 FINAL INSPECTION AND ACCEPTANCE

A. After all requirements of the Specifications and/or the Drawings have been fully completed, representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.

B. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

1.8 RECORD DRAWINGS

A. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of drawings. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, a set of reproducible Contract Drawings shall be obtained from the General Contractor and all changes as noted on the record set of prints shall be incorporated thereon with black ink in a neat, legible, understandable and professional manner. Refer to the Supplementary General Conditions for complete requirements.

1.9 APPROVALS, EQUALS, SUBSTITUTIONS, ALTERNATIVES, NO KNOWN EQUAL

A. Approvals: Where the words (or similar terms) “approved”, “approval”, “acceptable”, and “acceptance” are used, it shall be understood that acceptance by the Owner, Architect and Engineer are required.

B. Equal: Where the words (or similar terms) “equal”, “approved equal”, “equal to”, “or equal by”, “or equal” and “equivalent” are used, it shall be understood that these words are followed by the expression “in the opinion of the Owner, Architect, and Engineer”. For the purposes of specifying products, the above words shall indicate the same size, made of the same construction materials, manufactured with equivalent life expectancy, having the same aesthetic appearance / style (includes craftsmanship, physical attributes, color and finish), and the same performance.

C. Substitution: For the purposes of specifying products “substitution” shall refer to the submittal of a product not explicitly approved by the construction documents / specifications.

1. Substitutions of specified equipment shall be submitted and received by the Engineer ten (10) days prior to the bid date for review and written approval. Regulatory Agency approval for all substitutions will be the sole responsibility of the Contractor. To receive consideration, requests for substitutions must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letterform and identify the specified values/materials alongside proposed equal values/materials. In addition, catalog brochures and samples, if requested, must be included in the submittal. ONLY PRE-BID APPROVED PRODUCTS, ISSUED VIA A FORMAL BID ADDENDUM TO ALL BIDDERS, WILL BE ALLOWED ON THE PROJECT. REGARDLESS OF THE APPROVAL ON ANY SUBSTITUTION, ALL BIDS SHALL BE BASED ON THE PRODUCTS EXACTLY AS SPECIFIED. PRICING FOR EACH APPROVED SUBSTITUTION SHALL BE INCLUDED IN THE BID SUBMITTAL AS A SEPARATE LINE ITEM.

2. In the event that written authorization is given for a substitution, after award of contract, the Contractor shall submit to the Engineer quotations from suppliers / distributors of both the specified and proposed equal material for price comparison, as well as a verification of delivery dates that conform to the project schedule.

3. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged by Change Order.

4. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.

D. Alternates \ Alternatives: For the purposes of specifying products, “alternatives / alternates” may be established to enable the Owner / Architect / Engineer to compare costs where alternative materials or methods might be used. An alternate price shall be submitted in addition to the base bid for consideration. If the alternate is deemed acceptable, written authorization will be issued.

E. No Known Equal: For the purposes of specifying products, "No Known Equal" shall mean that the Owner / Architect / Engineer is not aware of an equivalent product. The Contractor will need to submit a "Substitution" item, per the requirements listed above, if a different product is proposed to be utilized.

1.10 SHOP DRAWINGS / SUBMITTALS

A. Shop Drawings / Submittals shall be submitted in six (6) bound sets accompanied by Letter of Transmittal, which shall give a list of the number and dates of the drawings submitted. Drawings shall be complete in every respect and bound in sets.

B. The Shop Drawings / Submittals submitted shall be marked with the name of the project, numbered consecutively and bear the approval of the Contractor as evidence that the Contractor has checked the Drawings. Any Drawings submitted without this approval will be returned to the Contractor for resubmission.

C. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in the Contractor's letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment that may be caused by the substitution. Samples shall be submitted when requested.

D. Only products listed as "Equal" within the contract documents, along with formally approved "Substitutions" will be reviewed. Products not conforming to these items will not be reviewed and will be returned to the Contractor for re-submittal.

E. Review comments used in response to shop drawings / submittals are:

• "No Exception Taken"	Product approved as submitted.
• "Furnish As Corrected"	Re-submittal not required, although the Contractor shall provide the submitted product with corrections as noted.
• "Revise And Resubmit"	Re-submittal required with corrections as noted.
• "Rejected"	Re-submittal required based upon the originally specified product.

F. Shop drawings shall be submitted on the following but not limited to:

- Lighting Fixtures, Lamps and Ballasts.
- Switchgear, Switchboards, Distribution Boards, Motor Control Centers, Panel boards, and Bus Ducts; complete with overcurrent device information.
- Transformers.
- Fire alarm System/Central Monitoring System.
- Wiring Devices.
- Lighting Control System / Dimming System Products.
- Pullboxes and Underground Vaults
- Terminal Cabinets
- Lighting Inverters, UPSs, RDCs, PDUs, Generators, Transfer Switches, TVSS Systems
- Cable Tray, Flexible Cable tray and Cable Runway
- Power Poles and Floor Boxes

- Arc Flash, Short-Circuit & Coordination studies
- All other products called out on drawings that call for shop drawing submittal.

1.11 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating and maintenance and servicing instructions, as well as four (4) complete wiring diagrams for the following items or equipment:

- Lighting Control System / Dimming Systems.
- Fire alarm system.
- Transformers.
- Switchgear, Switchboards, Distribution Boards, Motor Control Centers, Panel boards, and Bus Ducts; complete with over current device information.
- Lighting Inverters, UPSs, PDUs, Generators, Transfer Switches, TVSS Systems

B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Four (4) copies shall be presented to the Owner.

1.12 INTERRUPTION OF SERVICE OR SERVICE SHUTDOWN:

A. Any interruption of electrical services, electrical circuits, electrical feeders, signal systems, communication systems, fire alarm systems, etc. required to perform work shall meet the specific prior-approval requirements of the Owner. Such work shall be scheduled with the Owner to be performed at the Owner's convenience.

B. Interruptions/outages of any of the Owner’s systems and services mentioned above shall be scheduled to occur during other than the Owner’s normal business hours. Any overtime costs shall be borne by the Contractor.

C. See drawings for any additional requirements regarding outages, interruption and any temporary services required.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and Equipment: All electrical materials and equipment, including custom-made equipment, shall be new and shall be listed by Underwriter's Laboratories (UL) and bear their label or be listed and certified by a Nationally Recognized Testing Lab (NTRL) that is also recognized by the local Authority-Having-Jurisdiction (AHJ).

B. Switchgear /Switchboards / Distribution Boards / Motor Control Centers:

1. See general single line notes on single line drawing for more information.

C. Panel boards - Branch Circuit:

1. See drawings for requirements and panel board schedules; and Specification Section 26 24 16 for additional requirements.

D. Lighting Fixtures:

1. See drawings for lighting fixture and lamp schedules and additional specifications. Furnish, install and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure and lamps.

2. LED Drivers: See lighting fixture schedule notes. All noisy driver shall be replaced at no cost to the Owner.

3. Lamps: See lamp / fixture schedule and lamp / lighting fixture schedule notes.

E. Wiring Devices:

1. Provide wiring devices indicated per plan. Devices shall be specification grade. Acceptable manufactures are Leviton, Arrow-Hart and Hubbell. Provide all similar devices of same manufacturer, unless indicated otherwise. All device colors shall be from the full range of manufacturer standard color options as selected by the Architect. This selection will be made during the shop drawing review process

2. Receptacles:

a. Duplex receptacles shall be specification grade, 20 amperes, 125 volts, 3 wire, side wired with binding screws, parallel slots, U-ground, plaster ears and captive mounting screws. Body shall be phenolic, plastic or bakelite. Receptacles shall be heavy duty, 3-blade current carrying contacts and double wide flat blade ground contacts. Receptacles shall be Arrow-Hart 5242-I, Hubbell 5242-I or Leviton 5242-I or approved equal.

b. Single receptacles shall be specification grade, grounding type, side wired, with binding screws, receptacles shall have standard size ivory bakelite base. For circuits consisting of one single receptacle only, ampere rating of receptacle shall be the same as circuit breaker or fuse. 20 ampere, 125 volt receptacles shall be NEMA 5-20R, Arrow-Hart 5721-I.

c. Kiln receptacles and range receptacles shall be 3-pads, 4-wire, grounding type, rated 50 amperes at 125/250 volts, polarized, Arrow-Hart #5754, and shall be provided with a 2-gang, stainless steel plate, Arrow-Hart #9336.

d. Dryer receptacles shall be 3-wire, non-grounding type, rated 30 amperes at 125/250 volts, polarized, with "L" shaped and angled straight contacts and ivory bakelite baselite base, Arrow-Hart #9344N with a 2-gang stainless steel plate Arrow-Hart S703.

e. Ground fault interrupter type receptacles shall consist of a single receptacle and reset device manufactured in a standard configuration for use with a duplex plate. Receptacles shall be feed-thru, 20 ampere, NEMA 5-20R, ivory in color and shall be Leviton 6399-I, or equal. Exterior mounted receptacles shall be weather-proof.

f. Tamper resistant receptacles shall be 20 amp, 125 volts, Hubbell Cat. No. HBLSG62HI, Nema 5-20R.

F. Switches:

1. Local Switches:

   a. Local switches shall be tumbler type, specification grade, rated 20 amperes at 120-277 volts AC only, with plaster ears, binding screws for side wiring, and standard size composition cups which fully enclose the mechanism. Switches shall be approved for use at currents up to the full rating on resistive, inductive, tungsten filament lamp and fluorescent lamp loads, and for up to 80% of the rating for motor loads. Switches shall be single pole, double pole, 3-way, 4-way, non-lock type. Non-lock type switches shall have ivory handles, and switch shall be Hubbell HBL 1221-I single pole, HBL 1222-I double pole, HBL 1223-I 3-way, and HBL 1224-I 4-way.

   b. All lock type switches shall have metal or nylon key guides with ON/OFF indication, and shall be operable by the same key. Key switches shall be Hubbell1209

   c. Rotary lock switches shall incorporate a tumbler type lock to prevent unauthorized operation. Lock shall be tumbler type by P & F Corbin, keyed to a HH41 key. Lock switch shall be installed with pin tumblers facing downward. Key shall be removable in all positions. Each device shall be complete with 2 keys. Keys shall be delivered only to the District's Electrical Inspector. Switches shall be rated at 20 amperes, 120-277 volt AC. Switches shall be as follows: single pole switches shall be Arrow-Hart 1191; double pole switches shall be Arrow-Hart 1192; 3-way switches shall be Arrow-Hart 1193. Switch plates shall be of stainless steel, engraved with "ON" and "OFF" positions. Switch plates shall be Arrow-Hart 1187. For switch plates of 2 or more gangs, provide special order plates equal to the single gang plate.

   d. Pilot light switches shall be rated 20 amps and shall conform to the specifications for "local switches". The switches shall have red, rugged "Lexan" handles that are lighted by long-lasting neon lamps. Pilot light shall light when load is on. Single pole, 120 volt switches shall be Hubbell HBL1221-PL. Single pole, 277 volt switches shall be Hubbell HBL1221-PL7.

   e. Remote control switches for mechanically held contactors arranged for 3-wire control shall be tumbler type, momentary contact, single pole, 3-position with center "OFF", rated 20 amperes at 120-277 volts AC only, with plaster ears, binding screws for side wiring, standard size composition cups which fully enclose mechanism, and ivory handles; Hubbell HBL1556-I.

2. The following device plates shall be engraved:

   a. Key operated switches, switches with Pilot Lights and Switches for the control of motors, heaters and ventilators. Engraving shall be black and occur on the exposed side of the plate and indicate the motor, heater, or ventilator controlled.

   b. Receptacles on generator and/or UPS power shall have custom stamped plates with the words “Generator” or “UPS” in black letters.

3. Weatherproof Outlet Covers/Assemblies. All Receptacles identified as weatherproof on the drawings shall be GFCI type and equipped as follows:

a. Subscript WP-A: Recessed wall box, 6" x 6"x 5 ½" deep, with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location-listed raintight while-in-use. Unit shall comply with NEC, or CEC where adopted, Article 406.8(A) and (B). C.W. Cole TL-310-9-GFI-PH-MOD-CUSTOM COLOR Series with an interior metal plate suitable for a GFCI receptacle in one compartment separated from a second compartment with a metal separation barrier. The second compartment shall have a blank metal plate suitable for field installation of power, AV or communications devices. This compartment shall have a minimum ¾" C.O. with pull string routed from the box to the facility telephone backboard unless otherwise noted on the drawings. Provide 1 key minimum per device to the Owner's project manager upon completion of project. Include all costs for custom color powder coat finish as selected by Architect.

b. Subscript WP-B: Wet location-listed raintight while-in-use cast copper-free aluminum lockable cover with baked aluminum lacquer finish and one gang GFCI receptacle. Hubbell WP26M series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, Article 406.8(A) and (B). Contractor shall field paint custom color as selected by Architect.

c. Subscript WP- C: Single Service BK Lighting #CUS-1204-46 raintight while-in-use cast copper-free aluminum lockable cover with baked aluminum lacquer finish and one-gang GFCI receptacle. Hubbell WP26M series or equal. Polycarbonate covers are unacceptable. Wet location-listed weatherproof cover shall comply with NEC, or CEC where adopted, Article 406.8(A) and (B). Contractor shall provide custom color by manufacturer as selected by Architect. See drawings for additional details.

d. Subscript WP-D: Dual Service BK Lighting #CUS-1204-47 with raintight while-in-use cast copper-free aluminum lockable cover(s) with baked aluminum lacquer finish, internal barrier, one gang GFCI receptacle and one gang telecommunications outlet. Hubbell WP26M series. Polycarbonate covers are unacceptable. Wet location-listed weatherproof cover(s) shall comply with NEC, or CEC where adopted, Article 406.8(A) and (B). Contractor shall provide custom color by manufacturer as selected by Architect. See drawings for additional details.

G. Motor Controllers / Starters: See drawings for motorized equipment schedules and specifications.

H. Circuit Breakers:

1. Service entrance circuit breakers smaller than 400 Amp frame shall be thermal-magnetic trip with inverse time current characteristics unless otherwise indicated below. Service entrance main circuit breakers, 400 Amp frame and larger shall be 100% rated, solid-state type as outlined in this specification. All other service entrance circuit breakers, 400 Amp frame and larger, shall be 100% rated, solid-state type as outlined in this specification.

2. All non-service entrance circuit breakers 225 Amp and larger shall be thermal magnetic type and have continuously adjustable magnetic pick-ups of approximately 5 to 10 times trip rating. Breakers shall have easily changed trip rating plugs with trip ratings as indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Additionally, all non-service entrance circuit breakers, 600 Amp frame and larger, located in 480v 3 phase, 3-wire or 277/480v, 3 phase 4-wire switchgear, distribution boards or panel boards, shall be solid state, 100% rated. Breaker shall have built-in test points for testing long delay and instantaneous, and ground fault

(where shown) functions of the breaker by means of a 120-volt operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400 Amp and above - at the Engineer's request.

3. All non-service entrance circuit breakers less than 225 Amp shall be molded plastic case, air circuit breakers conforming to UL 489. Provide breakers with thermal magnetic trip units, and a common trip bar for two- or three-pole breakers, connected internally to each pole so tripping of one pole will automatically trip all poles of each breaker. Provide breakers of trip-free and trip-indicating bolt-on type, with quick-make, quick-break contacts. Provide single two- or three-pole breaker interchangeability. Provide padlocking device for circuit breakers as shown on the Drawings.

4. Where a Current Limiting Circuit Breaker (CLCB) is indicated on drawings or as required elsewhere in this specification, provide a U.L. listed current limiting thermal magnetic circuit breaker(s) u.o.n. An independently operating limiter section within a molded case is not allowed. Coordinate CLCB ratings as required to protect electrical system components on the load side of the CLCB to include, but not limited to, protecting automatic transfer switches, panel boards and lighting control panels.

5. Where a solid-state circuit breaker is indicated on drawings or as required elsewhere in this specification, provide a solid-state circuit breaker with minimum five function complete with built-in current transformers. The five functions shall be independently adjustable and consist of Overload/Long Time Amp Rating, Long Time Delay, Short Time Delay, Short Circuit/Instantaneous Pickup, but may also include Shunt Trip and/or Ground Fault if so indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Breaker shall have built-in test points for testing long delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120-volt operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400 Amp and above - at the Engineer's request.

6. Ground Fault Interrupting Breakers. Provide with molded plastic case, air circuit breakers, similar to above with ground fault circuit interrupt capability, conforming to UL Class A, Group 1.

7. Arc Fault Interrupting Breakers. Provide with molded plastic case, air circuit breakers, similar to above with arc fault circuit interrupt capability, conforming to UL 1699 & UL Class A, Group 1. Provide on all-dwelling unit circuits supplying bedrooms, sleeping quarters etc as required to comply with NEC, or CEC where adopted, Article 210.12(B).

8. Tandem or half-sized circuit breakers are not permitted.

9. Series Rated Breakers. UL listed series rated combinations of breakers can be used to obtain panelboard-interrupting ratings shown on Drawings. If series rated breakers are used, switchboards, distribution boards and panel boards shall be appropriately labeled to indicate the use of series rated breakers. Shop drawing submittal shall include chart of U.L. listed devices, which coordinate to provide series rating.

10. Circuit breakers shall be standard interrupting construction. Panelboard shall accept standard circuit breakers up to 225 amperes.

11. Circuit breaker handle accessories shall provide provisions for locking handle in the on or off position.

12. Shunt trip equipped circuit breakers shall be provided on all elevator feeders.

13. Temperature compensating circuit breaker(s) shall be provided when located in outdoor enclosure(s) or when located in an enclosure subject to high ambient heat due to nearby industrial processes etc.

14. Provide 75 degree Celsius-rated conductor lugs/lug kits as required on all circuit breakers to accept conductor quantities and sizes shown on drawings.

15. All circuit breaker terminations shall be suitable for use with 75 degrees Celsius ampacity conductors.

I. Disconnect Switches:

1. Non-fusible or fusible, heavy-duty, externally operated horsepower-rated, 600V A.C. Provide NEMA 3R, lockable enclosures for all switches located on rooftops, in wet or damp areas and in any area exposed to the elements.

2. Fusible switches shall be Class “R”.

3. Amperage, Horsepower, Voltage and number of poles per drawings- all of which shall be clearly marked on the switch nameplate.

4. Provide the Owner’s project manager with one (1) spare set of fuses and two (2) sets of fuse clips/fuses for every set of fuses on the project.

J. Fuses:

1. Provide fuses at all locations shown on the Drawings and as required for supplemental protection.

a. Fuses shall be manufactured by Bussman, Shawmut, or equal.

b. All fuses shall be the product of a single manufacturer.

2. Main and Feeder Protection.

a. Where rating of protective device is greater than 600A, provide Bussman Hi-Cap fuses, Class L, current limiting, having an interrupting rating of 200,000A RMS.

b. Where rating of protective device is 600A or less, provide Bussman Class RK series current limiting fuses, having an interrupting rating of 200,000A RMS.

3. Motor Protection.

a. Where rating of protective device is greater than 600A, provide Bussman Hi-Cap fuses, Class L, current limiting, having an interrupting rating of 200,000A RMS.

b. Where rating of protective device is 600A or less, provide Bussman Class RK series current limiting fuses, having an interrupting rating of 200,000A RMS.

c. Where fuses feeding motors are indicated but not sized, it shall be the responsibility of the Contractor shall coordinate the fuse size with the motor to

provide proper motor running protection.

d. When rejection type fuses are specified (Class RK series) the fuse holder of all switches (specified in other Sections) shall be suitable for the fuses provided.

K. Cable Tray, Flexible Cable Tray and/or Cable Runway:

1. See drawings for Cable Tray, Flexible Cable Tray and/or Cable Runway specifications.

L. Lighting Control / Dimming Systems:

1. See drawings for lighting Control and/or Dimming Systems schedules and specifications.

2. Wall box dimmers shall be rocker-type as manufactured by Lutron - no known equal. Dimmers and dimmer faceplates shall match the color of adjacent switches and faceplates. Dimmers and dimmer faceplates in wood finished areas shall generally be black unless otherwise indicated by the Architect. The Contractor shall obtain written approval of the Architect regarding final dimmer and dimmer faceplate color selection prior to ordering material. Multiple dimmers/switches shall be ganged together with a common cover plate. Provide dimmers as follows:

a.	Incandescent:	Lutron DIVA DV-10P or DV-103P (3-way) (1000 Watt max.)
b.	Electronic Low Voltage:	Lutron DIVA DVELV-300P or DVELV-303P-(3-way) (300 Watt)
c.	Magnetic Low Voltage:	Lutron DIVA DVLV-10P or DVLV-303p (3-way) (800 Watt max.)
d.	Fluorescent (3-Wire):	Lutron DIVA DVF-103P (single/3way, 8A @ 120v) or DVF-103P-277 (single/3way, 6A @ 277v)
e.	Fluorescent (0-10V):	Lutron DIVA MW-DV.
f.	Fluorescent (LutronTu-Wire):	Lutron DIVA DVFTU-5A3P with Lutron H.P. module where required.
g.	Fan Control:	Lutron DIVA DVFSQ-F (1.5A @ 120V. max, 3 speed, single pole, 3-way)

Contractor shall verify if dimmer(s) requires derating when ganged. Provide Lutron H.P. module, Lutron Power Boosters, and/or Lutron Interfaces where required to accommodate loads higher than dimmers' standard or derated load carrying capacity. .

M. Fire Alarm System/Central Monitoring System:

1. See drawings for Fire Alarm System or Central Monitoring System specifications.

Q. Fire Alarm, Clock, Security Intrusion Detection, Public Address, and Telephone Systems wiring shall be continuous from terminal cabinets or from equipment to each device. Splices are not allowed between devices and/or terminal cabinets at junction and pull boxes. Wiring shall be terminated at approved terminal blocks only.

R. All systems of wiring shall be so installed that, when completed, systems will be free from short circuits and grounds, other than required grounds. Electrical contractor shall include in his bid cost of services an approved independent testing laboratory to test all feeders insulation resistance.

The tests to be performed are as follows:

1. With a megger insulation tester, use the time-resistance method (Sometimes referred to as absorption test) to test each feeder and branch circuit wire. Tests must be conducted with wire disconnected at each end in order to test the wire itself. A second test must be conducted with the wire connected at each end and the circuit breakers or switches in the closed positions.

2. Tests shall be performed in presence of the District Electrical Inspector.

   Three copies of the test results shall be submitted to the District Electrical Inspector. Test results shall be submitted on an official form from the independent testing laboratory showing project location, test engineer, test conditions, test equipment data, and final test results.

S. Outlet Boxes and Fittings:

1. Outlet boxes used in concealed work shall be galvanized steel, pressed or welded type, with knockouts.

2. In exposed work, outlet boxes and conduit fittings required where conduit runs change direction or size, shall be cast metal with threaded cast hubs cast integral with box or fitting. Boxes and fittings shall not have unused spare hubs except as otherwise indicated or specified.

3. Fittings shall be cast metal and non-corrosive. Ferrous metal fittings shall be cadmium plated or zinc galvanized. Castings shall be true to pattern, smooth, straight, with even edges and corners, of uniform thickness of metal, and shall be free of cracks, gas holes, flaws, excessive shrinkage and burnt-out sand.

4. Covers for fittings shall be galvanized steel or non-corrosive aluminum and shall be designed for particular fitting used.

5. Light fixture outlets shall be 4" octagon, 4" square, 2 1/8" deep or larger, depending upon number of wires or conduits therein, and shall be equipped with 3/8" malleable iron fixture studs, and plaster rings. Plaster rings shall have round opening with 2 ears drilled 2-23/32" center to center.

6. For local switch outlets use 4" square 2 1/8" deep, boxes for single gang, 5" square boxes for two-gang, and special solid gang boxes with gang plaster ring for more than 2 switches.

7. For all receptacle, clock, bell, fire alarm pull station, speaker, thermostat, telephone, and data outlets, use 4" square, 2 1/8" deep boxes or larger, if necessary, with single gang plaster rings. For television outlets, use 4-gang deep boxes and 4-gang plaster rings.

8. Plaster rings shall be provided on all flush mounted outlet boxes except where otherwise indicated or specified. All plaster rings shall be same depth as finished surface.

9. In existing plywood wall or drywall construction, and where flexible steel conduit is fished into walls, one-gang and two-gang outlets for wiring devices may be sectional steel boxes

with plaster ears. Boxes shall be fastened to plywood with a flat head screw in each plaster ear screw hole.

10. Factory made knock-out seals shall be installed to seal all box knock-outs which are not intact.

11. At each location where flexible conduit is extended from a flush outlet box, provide and install a weather-proof universal box extension adapter.

T. Junction and Pull-Boxes:

1. Junction and pull-boxes, in addition to those indicated, shall only be used where absolutely necessary with specific direction of the District's Electrical Inspector in each case.

2. Interior and non-weatherproof boxes shall be constructed of blue or galvanized steel with ample laps, spot welded, and shall be rigid under torsional and deflecting forces. Boxes shall have auxiliary angle iron framing where necessary to ensure rigidity. Covers shall be fastened to box with a sufficient number of brass machine screws to ensure continuous contact all around. Flush type boxes shall be drilled and tapped for cover screws at Site if boxes are not installed plumb. All surfaces of pull and junction boxes and covers shall be given one coat of metal primer, and one coat of aluminum paint.

3. Weatherproof pull and junction boxes shall conform to foregoing for interior boxes with following modifications: Cover of flush mounting boxes shall have a weather-tight gasket cemented to and trimmed even with cover all around. Surface or semi-flush mounting pull and junction boxes shall be UL approved as rain-tight and shall be complete with threaded conduit hubs. All exposed portions of boxes shall be galvanized and finished with a prime coat and coat of baked-on gray enamel.

4. All junction and pull-boxes shall be rigidly fastened to the structure and shall not depend on conduits for support.

5. Underground Concrete Pull Boxes:

a. Precast Concrete Pull Boxes. Concrete pull boxes shall be traffic type, reinforced for H-20 Traffic bridge loading, Precast concrete. Pull boxes with inside dimensions 2'-0"x 3'-0" x 3'-0"D shall consist of a base section, top ring and cover. Base section shall have two 10"x10" knockouts in each 3'-0" side, and one 20"x20" knockout in each 2'-0" side. Pull boxes with inside dimension 4'-0 x 4'-0"x 4'-0"D shall consist of a base section, mid section, topping, and cover. Base section shall have two 8"x 16" knockouts on each of two opposite sides, and one 20" x 20" knockout on each of the other two opposite sides. All pull boxes shall have a minimum of 6" diameter sump knockout, and 1" diameter ground rod knockout. In each pull box, furnish and install cable racks on walls. Each rack shall be equipped with 3 porcelain cable holders on a vertical steel mounting bar. Each pull box shall have 3/4" diameter pull irons. Covers shall be traffic type consisting of steel safety plate bolted to frame. Covers shall be marked "Electrical", "Power" "Telephone", "Signal" or "Ground", as required. Pull boxes shall be as manufactured by Quickset, or approved equal.

b. Provide end bells in all duct entrances. Terminate each metal conduit with insulated bushing having grounding terminal, O.Z. Type "Big".

c. Place pulling irons on opposite walls and below horizontal centerlines of ducts

and bricked-up openings, and in bottom. Install pulling irons with each end hooked around a reinforcing bar.

d. Install a floor drain in every concrete pullbox into a sump containing 10 cubic feet of 1" crushed rock; minimum size 48" deep and 36" diameter. Provide 36" length of tile pipe extending down into the sump. Provide a grille over the top opening of pipe.

e. Install a 3/4" diameter, 10'-0" copperweld steel ground rod in every power concrete pull-box. Locate near a wall with 6" projection above floor for ground clamps. Permanently and effectively ground all metal equipment cases, cable racks, etc., in all pull boxes.

f. Provide a 6" deep sand base under each pull box.

g. Identify all power and signal cables by tagging in all manholes and pull boxes. Tie securely to cables with nylon cord or insulated type TW wire. Tie so that turns of wires do not form a closed electrical circuit.

h. Top of steel plate shall have a minimum coefficient of static friction of 0.5 for either wet or dry conditions, when tested for any shoe sole material. Testing and certification of the friction factor shall be conducted by an independent testing laboratory approved by the engineer, under the direction of a registered Civil or Quality Engineer. Testing shall conform to ASTM D1047 or F489 or F609, or other procedure approved by the Engineer.

6. Underground utility boxes shall be reinforced concrete with non-setting shoulders to prevent settlement following installation. Boxes shall be furnished with cast iron cover with finger hole, size as indicated on Drawings. Utility boxes shall be as manufactured by Quickset, or approved equal.

7. Manholes, vaults and pull-boxes required by utility company, and installed by Electrical Contractor, shall meet all requirements of utility company.

U. Plywood Backboards: Where indicated for telephone or communications system terminals or other equipment assemblies, provide backboards of size indicated. Use 3/4" thick x 8' tall (length per plans), Douglas Fir, void-free, kiln-dried, fire-rated plywood finished on one side and prime coat painted on all surfaces with finish coat of enamel paint, color by Architect. Leave one (1) fire-rating stamp/sheet exposed for inspection.

V. Terminal Cabinets:

1. Terminal cabinets shall be fabricated of hot dipped galvanized code gauge sheet metal for flush or surface mounting, complete with barriered sections, a door for each vertically barriered section and sizes as indicated on plan. Doors shall be hinged and lockable. Locks shall be keyed to match the branch circuit panelboards. Terminal cabinet trims shall match the branch circuit panels.

2. Provide each terminal cabinet with a full size plywood backboard.

3. Terminal cabinets shall be installed complete with full-length skirts of the same construction and finish as the terminal cabinet.

4. Where mounted outdoors, terminal cabinets shall be NEMA 3R, weatherproof complete

with gaskets and required sealant to prevent moisture from entering the terminal cabinet.

5. All terminal cabinets and terminal cabinet barriered sections shall be labeled by the cabinet or cabinet section use (i.e. CATV, Security, etc). Labels shall be Micarta type as specified elsewhere in these specifications. Unless otherwise noted, all termination blocks and cables shall be labeled per ANSI/EIA 606 standard.

W. Painting: Terminal cabinets, panels, junction boxes, pull boxes, etc., and conduit installed in public view shall be painted with colors selected by the Architect to match the subject surface. Refer to painting section of the specifications for additional requirements.

X. Seismic Design and Anchoring of Electrical Equipment:

1. Seismic Protection Criteria: All Electrical and Mechanical machinery installations provided, as part of this contract located in any Seismic Risk Zone of the Uniform Building Code Seismic Risk Map shall be protected from earthquakes in accordance with the International Building Code and, as applicable, the state and local building codes and regulations. Protection criteria for these zones shall be a Horizontal Force Factor as prescribed by the IBC, or locally adopted building codes, multiplied by the machinery weight considered passing through the machinery center of gravity in any horizontal direction. Unless vibration isolation is required to protect machinery against unacceptable structure transmitted noise and/or vibration, machinery shall be protected from earthquakes by rigid structurally sound attachment to the load supporting structure. The force factor and anchorage shall be determined by calculations performed and submitted to the Architect by a professional engineer registered in state where the work is being performed (civil or structural) hired by the Contractor. The Contractor shall be responsible for the design of seismic restraint systems for all pieces of equipment weighing over 50 pounds including but not limited to the following:

a. Switchgear, Switchboards, Distribution Boards, Motor Control Centers, and Panel boards.
b. Conduits/Conduit support trapezes
c. Transformers
d. Light Fixtures
e. Inverters, UPSs, RDCs, PDUs, Generators, Transfer Switches
f. Cable Tray, Flexible Cable Tray, Ladder Tray
g. Bus Duct

2. Seismic protection, labor, materials and design shall be included in the Contract sum.

Y. Trenching and Backfilling: Contractor shall be responsible for trenching and backfilling. Refer to Trenching and Backfilling section of the specifications for complete requirements.

PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes:

1. All conduit installed in the dry walls or ceilings of a building shall be steel tube (EMT), aluminum tube (EMT), or Intermediate Metal Conduit (IMC). Flexible conduit shall not be used in lieu of EMT, IMC or rigid conduit except as noted herein.

2. Galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) shall be used as follows:

   - when noted on the drawings.
   - when considered exposed to damage by the local AHJ.
   - when installed in wet or damp locations and of a trade size where listed-raintite fittings, connectors, couplings etc. are unavailable.
   - when required by NEC or CEC Article 517.13.
   - when installed in concrete and masonry. The use of ENT in CMU walls and parking structures may be allowed only as directed in writing by the Engineer. Request for ENT substitution must be made prior to bid and in accordance with pre-bid substitution requests requirements of these specifications.

3. Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with NEC, or CEC where adopted, Article 342.

4. Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. All flexible steel conduit runs shall be less than 6'-0". All outdoor installation shall be made using liquid-tight flex with approved fittings. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing by the Engineer.

5. Flexible liquidtight conduit shall be installed in lieu of the flexible steel; where required by the NEC, or CEC where adopted, in damp and wet location, where exposed to weather, in refrigerated area (65°F or less), and/or between seismic joints. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of liquidtight flexible conduit shall be allowed as approved in writing by the Engineer on a case by case basis.

6. Rigid metallic conduit installed underground or embedded in concrete shall be 1” trade size minimum and shall be wrapped with 20 mil polyvinyl chloride plastic tape, PVC conduit installed underground or embedded in concrete shall be 3/4 “ minimum trade size.

7. Where required for providing an Electrical Circuit Protective System to comply with NEC, or CEC where adopted, Articles 695 and 700, utilize UL listed 2-hour fire-rated, RHH-RHW conductors in conduit.

8. Conduit shall be run so as not to interfere with other piping fixtures or equipment.

9. The ends of all conduits shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.

10. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.

11. Where conduit is underground, under slabs or grade, exposed to the weather, or in wet locations, make joints liquid tight and gas tight.

12. All metal conduit in masonry and concrete and where concealed under floor slabs shall have joints painted with thread compound prior to makeup.

13. PVC conduit shall not be run in walls.

14. Where conductors enter a raceway or a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.

15. Where conduit extends through roof to equipment on roof area, this Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be delivered to the roofing contractor for installation. The actual location of all such roof penetrations and outlets shall be verified by the Architect/Owner. Contractor shall verify type of flashing prior to bid and include all costs.

16. All conduit shall be supported at intervals not less than 6'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two-hole conduit clamp properly secured.

17. Where conduit racks are used the rack shall consist of two piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.

18. Nail-in conduit supports, one-piece set screw type conduit clamps or perforated iron for supporting conduit shall not be used.

19. Seismic Conduit Support:

    a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of supporting the tributary weight of conduit and contents in any direction. Maximum spacing of support and braces are to be as follows:

CONDUIT SIZE	MAXIMUM SPACING
1/2" to 3"	6'-0"
3-1/2" to 4"	8'-0"

20. All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.

21. Open knockouts in outlet boxes only where required for inserting conduit.

22. Locate wall outlet of the same type at same level in all rooms, except where otherwise noted.

23. Outlet boxes on metal studs shall be attached to metal hangers, tack welded or bolted to studs; on wood studs attachment shall be with wood screws, nails not acceptable.

24. Recessed boxes shall not be mounted back-to-back in any wall; minimum offset shall be 24 inches.

25. Junction Boxes that do not contain any device(s) shall be located in storage rooms, electrical closets, or above accessible ceilings, not in hard lid ceilings or other forms of inaccessible ceilings. Place boxes which must be exposed to public view in a location approved by the Owner's Project Manager. Provide covers or plates to match adjacent surfaces as approved by the Owner's Project manager.

26. Surface mounted pull boxes, terminal cabinets, junction boxes, panel boards etc., shall be attached to walls using appropriate screws, fasteners, backing plates, stud blocking etc., as detailed on Architectural and/or Structural drawings. If architectural and/or Structural drawings are not provided on the Project, Contractor shall provide all necessary mounting hardware and backing support to comply with local building code requirements and any additional requirements imposed by the local Authority-Having-Jurisdiction.

27. Except where below grade, sleeves shall be installed where conduit passes through masonry or concrete walls and shall be 24 gauge galvanized steel no more that 1/2" greater in diameter than the outside diameter of the conduit. When located in non-rated structures , caulk conduit sleeve with stone wool. When located in fire rated structures, provide U.L. listed fire stopping system. See fire stopping section of this specification for additional requirements.

28. All boxes shall be covered with outlet box protector, Appleton SB-CK, or similar device / method to keep dirt / debris from entering box, conduit or panels. If dirt / debris does get in, it shall be removed prior to pulling wires.

29. All boxes installed outdoors shall be suitable for outdoor installations, gasketed, screw cover and painted as directed by the Architect with weatherproof paint to match building.

30. All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.

31. Provide nylon or a 1/8-inch O.D. polyethylene rope, rated at 250 pounds tensile strength, in all conduits more than 5 feet in length left empty for future use. Not less than 5 feet of rope shall be left at each end of the conduit. Tag all lines with a plastic tag at each end indicating the termination/stub location of the opposite end of the conduit.

32. All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/racks, Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system. Support conduit to structure above suspended ceilings 8" minimum above ceiling to allow removal of ceiling tile. Maintain two-inch clearance above recessed light fixtures

33. All exposed conduits and support hardware shall be painted to match the finish of the wall or ceiling to which it is supported.

34. Where conduits or wireways cross seismic joints, provide approved flexible conduit connection or approved expansion/deflection fitting to allow for displacement of conduit in all three axes. Connection shall allow for movement in accordance with design of seismic joint. Non-flexible raceways crossing expansion joints or other areas of possible structural movement shall make provision for 3-way movement at such points by means of expansion/deflection fittings. Fittings shall be installed in the center of their axes of movement and shall not be deflected to make part of a conduit bend, or compressed or extended to compensate for incorrect conduit expansion/deflection fittings(s) complete with ground jumpers.

Where necessary, provide approved expansion joints to allow for thermal expansion and contraction of conduit(s). Install expansion joints complete with ground jumpers.

35. Seal all conduits where termination is subject to moisture or where conduit penetrates exterior wall, floor or roof, in refrigerated areas, classified (hazardous areas) and as indicated on the drawings.

36. Except as otherwise indicated on the Drawings or elsewhere in these specifications, bends in feeder and branch circuit conduit 2 inches or larger shall have a radius or curvature of the inner edge, equal to not less than ten (10) times the internal diameter of the conduit. Except where sweeping vertically into a building where sweep radius equals ten (10) times conduit diameter, underground communications and building interconnect conduits 3 inches or larger shall have a minimum 12'-6" radius or curvature of the inner edge. For the serving utilities, radius bends shall be made per their respective specifications.

37. Tag all empty conduits at each accessible end with a permanent tag identifying the purpose of the conduit, footage end-to-end, and the location of the other end. In wet, corrosive outdoor or underground locations, use brass, bronze, or copper 16 gauge tags secured to conduit ends with #16 or larger galvanized wire. Inscribe on the tags, with steel punch dies, clear and complete identifying information.

38. The following additional requirements shall apply to underground conduits:

    a. Underground conduit shall be Schedule 40 PVC (polyvinyl chloride) unless otherwise indicated elsewhere in these specifications or as required per NEC, or CEC where adopted Article 517.13.

    b. In all cases, where any conduit(s) pass under a building slab or footing, the electrical contractor will provide a Bentonite clay or concrete barrier that conforms to the height and width of the trench excavation and is a minimum of 18" thick. In all cases, where conduit(s) pass thru a sleeve in a footing or other foundation element, the electrical contractor will provide a Bentonite clay or concrete barrier between the sleeve and the conduit(s) surrounding the conduit(s) for the entire depth of the sleeve. The barrier is required to prevent passage of moisture under or thru the slab or footing via the trench or sleeve.

    d. Where underground conduit passes under a building slab, concrete encasement may not be required, except as required above, contact the Engineer for written direction prior to omitting any encasement.

    e. Underground conduits, which terminate inside building(s) below grade, such as in a basement level, or which slope so that water might flow into interior building spaces, shall be sealed at the point of penetration with a modular conduit seal (Link-Seal or equal by Rox Systems). Conduit/conduit sealing system penetrations of waterproofing membranes/systems on existing structures shall be completely restored as required to maintain membrane/system manufacturer and installer warrantee for the installation. All conduits shall be provided with a 4% slope away from buildings. All conduits shall be installed such that the water cannot accumulate in the conduit and such that water drains into the nearest manhole, pull box or vault – not into the facility. In instances where grade changes or elevation differences prevent sloping of conduit away from a building into the nearest manhole, pull box or

vault or where accumulation of water in a manhole, pull box or vault may result in water traveling into the facility, conduits shall be sealed internally at each end of each conduit using conduit sealing bushing, sized as required for the conductors contained within the conduit (O-Z Gedney #CSBG 100psig withstand or equal). In all cases, install plugs or caps in spare (empty) conduits at both ends of each conduit (Jackmoon or equal) able to seal both water and gas from entering the facility via the conduits.

. f. All conduits installed underground shall be entirely encased in concrete 3" thick on all sides with multiple conduits spaced not less than 1-1/2" apart, except where otherwise specified. Provide approved conduit spacers as required to prevent any deflection of conduits when concrete is placed and to preserve position and alignment of conduits in concrete. Conduits shall be tied to spacers. Anchors shall be installed to prevent floating of conduits during pouring of concrete. Red concrete shall be used to encase conduits of systems operating above 600 volts.

g. All underground conduits shall be buried to a depth of not less than 24" below finished grade to top of the concrete envelope, unless otherwise specified.

h. Assemble sections of conduit with approved fittings and stagger all joints. Cut ends of conduit shall be reamed to remove all rough edges. Joints in all conduits shall be made liquid-tight. All bends at risers shall be completely below surface where possible.

i. Two or more conduit runs in a common trench shall be separated by at least 1-1/2" of concrete. Electric conduit runs installed in a common trench with other utility lines shall be separated from such lines by at least 12" horizontally. Public telephone conduits shall be separated from electric conduits or other utility lines by not less than 3" of concrete.

j. The District's Electrical Inspector shall be called to the site for approval of all underground installations before and during concrete pour. The Contractor shall demonstrate the usability of the underground raceways installed as part of this contract. a round, tapered, rigid mandrel shall be drawn through each run of conduit in the presence of the District Inspector, and utility company inspector where applicable, before and after pouring concrete. Mandrel shall be 6" in length minimum, and have a diameter which is within 1/4" of the diameter of the conduit to be tested. Contractor shall repair or replace any conduit(s) which will not readily pass the mandrel test.

k. Nonmetallic conduit installations shall comply with following additional requirements: All joints in PVC conduit shall be sealed by means of approved solvent-weld cement supplied by conduit manufacturer. All nonmetallic conduit bends and deflections shall comply with requirements of applicable electrical code, except that minimum radius of any bend or offset for conduits sized from 1/2" to 1-1/2" inclusive shall not be less than 24". All bends at risers and risers shall be rigid steel conduit. Radius of curve of any bend or offset, in nonmetallic conduit for public telephone system shall be not less than 10 times trade size of conduit, unless otherwise specifically approved by public telephone system.

l. Furnish and install a 6" wide polyethylene red underground barrier type 12" above full length of concrete "CAUTION ELECTRIC LINE BURIED BELOW".

m. All underground conduit systems for use by serving utility company shall meet all requirements of utility company.

B. Installation of 600-Volt Conductors:

1. All electrical wire, including signal circuits, shall be installed in conduit.

2. All circuits and feeder wires for all systems shall be continuous from over current protective device or switch to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.

a. Utilize preinsulated "winged" spring type connectors, 3M Company "Performance Plus" #O/B or #R/Y as required for splices and taps in conductors #6 AWG and smaller. When a spring connector is used in an underground environment or when subject to moisture, utilize a 3M Company Scotchcast 3507G epoxy resin connector sealing pack to seal the spring connector.

b. Wires #4 AWG and larger AWG shall be joined together as follows:

i. When located in an underground environment or when subject to moisture, the splice shall be made with compression connector and sealed by a 3M, or equal, PST cold shrink connector insulator.

ii. When located in an interior environment, the splice shall be made with an Ilsco or equal dual rated, insulated splice-reducer connector or multi-tap connector-listed for use with 75/90 degree Celsius rated conductors.

c. Connections to busbar shall be made with dual-rated copper/aluminum one-piece compression lugs. Paralleled conductor connections shall be by mechanical lugs.

3. Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires.

4. Install UL approved fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.

5. For 20 ampere branch circuit wiring, increase #12 conductors to #10 for 120 volt circuits longer than 100 feet and for 277 volt circuits longer than 150 feet.

6. Conductor Support. Provide conductor supports as required by codes and recommended by cable manufacturer. Where required, provide cable supports in vertical conduits and provide lower end of conduit with a ventilator.

C. Grounding / Bonding:

1. Provide grounding and bonding for entire electric installation as shown on plans, as listed herein and as required by applicable codes. Included, but not limited to, are items that require grounding / bonding:

a. Conduit, Raceways and Cable Trays.
b. Neutral or identified conductors of interior wiring system.
c. Panel boards, Distribution Boards, Switchgear and Switchboards.

d. Non-current carrying metal parts of fixed equipment.
e. Telephone distribution equipment.
f. Inverters, UPS, PDU, RDC, Transfer Switch and Generator Systems.
g. Raised Flooring.
h. Antennas.
i. Lightning Protection Systems.
j. Metal piping installed in or attached to a building/structure.
k. Metallically isolated structural steel.
l. Metallically isolated underground metal water piping.
m. Elevator hydraulic piston/lift case.

2. In multi-occupancy buildings, Contractor shall bond metal water piping systems installed in, under or attached to a building and/or structure serving individual occupancies where the piping system(s) are metallically isolated from each other. Per NEC, or CEC where adopted Art. 250.104(A)(2) and (4), the bonding conductor shall be sized per Table 250.122 and connected to the switchboard/panelboard serving that suite/occupancy.

3. Use of Ground Rods: Furnish and install required number of 3/4" x 10' copper clad ground rods to meet specified resistance, all required grounding wires, conduit and clamps. The size of the grounding conductors shall be not less than that set forth in the latest edition of the California Code of Regulations, Title 24, State of California and NEC (CEC, where adopted), unless otherwise indicated. Rods shall be installed such that at least 10 feet of length is in contact with the soil. Where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from vertical or shall be buried in a trench that is at least 30 inches deep. The upper end of the electrode shall be flush with or below ground level unless the above ground end and the grounding electrode conductor attachments are protected against physical damage. Unless otherwise noted, connection to the grounding electrode conductor may be by compression type or exothermic process connector. Mechanical connectors shall not be used.

4. Grounding System Connection:

   a. Compression connectors shall be unplated copper, manufactured by Burndy, or approved equal, designed specifically for the intended connection.

   b. Exothermic weld-type connectors shall be ‘Cadweld’ manufactured by Erico Products, or approved equal, designed specifically for the intended connection.

   c. Mechanical connectors shall not be used.

5. Isolated Ground Receptacles shall have an insulated ground wire connected between the receptacle and the panelboard isolated ground bus. Unless otherwise noted, this ground wire shall not be grounded at any other point, and shall be distinguished from other ground wires by a continuous yellow stripe.

6. Provide separate green equipment ground conductor in all electrical raceways, to effectively ground all fixtures, panels, controls, motors, disconnect switches, exterior lighting standards, and noncurrent carrying metallic enclosures. Use bonding jumpers, grounding bushings, lugs, busses, etc., for this purpose. Connect the equipment ground to the building system ground. Use the same size equipment ground conductors as phase conductors, up through #10 AWG. Use NEC (or CEC where adopted) Table 250.122 for conductor size with phase conductors # 8 and larger, if not shown on the Drawings.

7. Clean the contact surfaces of all ground connections prior to making connections.

8. Ductwork. Provide a flexible ground strap, No. 6 AWG equivalent, at each flexible duct connection at each air handler, exhaust fan, and supply fan, and install to preclude vibration.

9. Motors. Connect the ground conductor to the conduit with an approved grounding bushing, and to the metal frame with a bolted solderless lug. Bolts, screws and washers shall be bronze or cadmium plated steel.

10. Building grounding system resistance to ground shall not exceed 25 ohms.

D. Line Voltage and Low Voltage Power Supplies to all Mechanical Equipment Including Plumbing, Heating and Air Conditioning Units;

1. An electric power supply, including conduit, any necessary junction and/or outlet boxes and conductors and connection shall be furnished and installed by this Contractor for each item or mechanical equipment.

2. Power supplies to individual items of equipment shall be terminated in a suitable outlet or junction box adjacent to the respective item of equipment, or a junction box provided by the manufacturer or the equipment and directed by the Mechanical Contractor. Allow sufficient lengths of conductor at each location to permit connection to the individual equipment without breaking the wire run.

3. The location of all conduit terminations to the equipment is approximate. The exact location of these conduit terminations shall be located and installed as directed by the Mechanical and Plumbing Contractor.

4. Provide power supplies to all plumbing and mechanical equipment, including but not limited to, equipment furnished and installed by Owner or Contractor such as heating and air conditioning equipment, pumps, boilers, auto valves, water coolers, trap primers etc. The installation shall produce a complete and operable system.

5. Unless otherwise noted, this Contractor shall furnish and install all conduit, boxes, wires, etc., for line voltage wiring and low voltage wiring.

6. It is the Contractor's responsibility to verify with the Drawings of other trades regarding the extent of his responsibility for mechanical equipment. The bid must include a sum sufficient to cover the cost of the installation.

7. The location of all power supply connection and/or terminations to the mechanical equipment is approximate. The exact locations of these terminations shall be verified with other trades during construction.

E. Prefabricated Equipment: Installation of all prefabricated items and equipment shall conform to the requirements of the manufacturer's specifications and installation instruction pamphlets. Where code requirements affect installation of materials and equipment, the more stringent requirements, code or manufacturer's instructions and/or specifications, shall govern the work.

F. Firestopping:

1. The Contractor shall be responsible for furnishing all material, labor, equipment, and services, in conjunction with the selection and installation of a complete and fully

functioning and code compliant UL-listed fire stop assembly/system(s) as required by project conditions.

2. Each fire stop assembly/system shall have an "F" and/or "T" rating as required by each condition requiring fire stopping. Each fire stop assembly/system shall have a current U.L. listing, as indicated in the latest edition of the U.L. Fire Resistance Directory. Contractor shall verify acceptability of all fire stopping methods and system selections with the authority having jurisdiction prior to installation. The Contractor shall install each firestop assembly/system in accordance with the manufacturer's printed instructions.

3. Each fire stop assembly/system shall be labeled with fire stop manufacturer-furnished label on each side of the fire stopping systems depicting UL # etc.

G. Housekeeping Pads

1. Provide a minimum 3" high housekeeping pad above finished floor/finished grade for all exterior floor mounted switchgear, switchboards, distribution boards, transformers, motor control centers etc flush with the face of the equipment. Provide a minimum 3" high housekeeping pad for all floor mounted switchgear, distribution boards, transformers, motor control centers, transfer switches etc located in mechanical central plant(s) and other mechanical spaces flush with the face of the equipment. Confirm pad dimensions with local inspector prior to forming pad to ensure any local code interpretations/conditions regarding housekeeping pads are met.

1. Unless otherwise noted above, provide a minimum 1-1/2" high housekeeping pad above finished floor/finished grade for all interior floor mounted switchgear, switchboards, distribution boards, transformers, motor control centers, transfer switches etc flush with the face of the equipment. All housekeeping pad heights are as measured from finished floor or grade. Confirm pad dimensions with local inspector prior to forming pad to ensure any local code interpretations/conditions regarding housekeeping pads are met.

2. Provide a 1-1/2" high housekeeping pad above finished floor/finished for service equipment. Prior to pad rough-in, Contractor shall verify serving utility company's maximum meter height requirements and, if necessary, adjust height of housekeeping pad to comply with those requirements. In indoor applications, the pad shall be flush the face of the switchgear. In outdoor applications, the housekeeping pad shall extend a minimum of 4 feet from the front of switchgear/switchboard’s weatherproof enclosure. Confirm pad dimensions with local inspector prior to forming pad to ensure any local code interpretations/conditions regarding housekeeping pads are met.

3. All housekeeping pads located in, on or attached to a building shall be seismically braced/connected to the building structure.

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H. Feeder Identification

1. Lighting, power, low voltage feeder wires and cables shall be identified at each point conduit run is broken by a cabinet, box, gutter, etc. Where terminal ends are available, identification shall be by means of a heat shrink wire marker, which provides terminal strain relief, Raychem Shrinkmark, or Brady Permasleeve markers. Identification in other areas shall be by means of wraparound tape markers Raychem Cable Markers, or Brady Perma-Code. All markers shall include the feeder designation, size and description.

I. Tape

1. Splices, joints and connectors joining conductors shall be covered with insulation equivalent to that on conductors. Free ends of conductors connected to an energized source shall be taped. Voids in irregular connectors shall be filled with insulating compound before taping. Thermoplastic insulating tape approved by UL for use as sole insulation of splices shall be used and shall be applied according to manufacturer's printed specifications.

J. Testing

1. The Contractor shall obtain an independent NETA certified testing service that will provide all instrumentation and tests on the entire campus electrical system and all new and/or existing electrical equipment as hereinafter described and further directed by the Architect. The test shall be performed after the completion of all electrical systems. All tests shall be recorded, documented and submitted to the Architect for review. Submit three (3) copies on an official form indicating project location, test engineer, test conditions, test equipment data, ground system layout or diagram and final test results.

   a. Test for Phase to Ground/Defective Insulation Condition:
      - Open main service disconnect.
      - Isolate the system neutral from ground by removing the neutral disconnect link located in the service switchboard.
      - Close all submain disconnects.
      - Close all branch feeder circuit breakers.
      - Measure the resistance of each phase to ground. A properly calibrated “Megger” type test instrument to be used. The test voltage shall be 500 volts.
      - Record all readings after one-minute duration and document into a complete report.

   b. Isolating Grounds: In the event that low resistance grounds are found in the system, they shall be isolated and located by testing each circuit individually as outlined above. Make proper corrections to restore the resistance values to an acceptable value.

2. Method of obtaining ground resistance shall be in accordance with the latest edition of the James G. Biddle (Plymouth Meeting, Pennsylvania) manual published on this subject.

   a. Perform “fall-of-potential” tests on the main grounding electrode of system per IEEE Standard No. 81, Section 8.2.1.5 when suitable locations for test rods are not available, a low resistance dead earth or reference ground will be utilized.

   b. Perform the two-point method test per IEEE Standard No. 81, Section 8.2.1.1, to determine the ground resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points, ground rod and building steel, utility piping such as water and gas and panelboard grounds. Metal railings at building entrances and handicap ramps shall also be tested.

   c. Acceptable testing equipment: Vibroground by Associated Research, Inc.; Megger Earth Tester by James G. Biddle Company; or equivalent by Megger.

3. Provide arc flash analysis for all new and existing switchgear on campus, whether or not shown in the Contract Documents and include arc flash hazard labels.

4. Provide a complete circuit breaker coordination study from the main circuit breaker at the main switchboard down to branch circuit breakers at the panelboards. The system shall be fully coordinated such that a fault anywhere in the system will only affect the next circuit protective device ahead of the fault.

5. All instrumentation and personnel required for testing shall be provided by the Contractor at the Contractors expense.

6. All ground fault equipment shall be tested by a certified testing laboratory and shall be set as recommended by the switchgear manufacturer so as to be coordinated with other protection devices within the electrical design. Copies of the coordination test and settings shall be sent to the Architect.

7. Take and record ampere and line voltage measurements under full load on all panels and switchboard feeders and motor circuits over 10 horsepower and/or 14 amperes. Record measurements at the equipment served and submit to the Architect for review.

8. If, in the opinion of the Architect, the voltages and regulations are not met within acceptable limits, make arrangements with the serving utility for proper electrical service and then verify that such has been provided.

9. Refer to testing (additional requirements) elsewhere in this specification for additional testing requirements.

10. The maximum resistance to ground shall not exceed 5 ohms.

11. Upon completion of work, the Contractor shall make additional tests as necessary to satisfy the Owner or the Architect or his representative that the true intent and meaning of the drawings and specifications have been carried out. Contractor shall provide all instruments and labor necessary to make such tests. Any work showing faults under test, and any work not in accordance with the specifications, shall be made good by the Contractor at his own expense. Such tests may occur at anytime during the guarantee period.

END OF SECTIOIN 26 01 00

Project:
2023-0103 Sussman Middle School -Downy Unified School District

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From:

To:

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ColdZone



Model ET-1

Air Cooled Refrigeration Systems

ITEM NO:_____

ENVIRO-THERM REFRIGERATION SYSTEM

The packaged refrigeration system is to be U.L. Listed and will be located on a pad outside of the building. This unit includes the outdoor weather housing, compressor and condenser systems and electrical control panel, all housed within a single assembly. The evaporator coil assemblies will be supplied with all the required options and accessories. All of the component parts, options and accessories will be provided, mounted, piped and wired, as required by the manufacturer. The system shall be manufactured to operate at: _____ volts, _____ phase, _____hertz.

FRAME AND HOUSING

The outdoor weather shall include a welded, de-burred and cleaned structural steel base frame made of 3 inch members. The exterior housing and access doors will be manufactured of a minimum of 16 gauge galvanized steel which has been assembled and cleaned. The frame and housing shall be painted with a baked polyester powder coating.

COMPRESSOR AND CONDENSER SYSTEMS

All compressors will be Copelaweld, Scroll, Copelametic or Discus. All compressors will be manufactured to operate with R-448A, R-449A, R-407A, or R-404A refrigerant. Each Compressor system shall be filled with refrigerant compatible refrigeration oil by the manufacturer and will include discharge and suction line vibration protection (vibrasorbers with Copelametic and Discus compressors), dual pressure control with hoses, liquid line filter-dryer, moisture indicating sight glass, flooded head pressure control valve and crankcase heater. Each of these systems shall also include a receiver tank capable of accepting all of the system refrigerant without exceeding 90% of its volumetric capacity. Each receiver will be provided with a fusible plug or pressure relief vent and, at its outlet and/or inlet an isolation valve with a service port. Additionally, all compressor systems that will operate at suction temperatures below 0°F shall include a suction line accumulator.

The condenser system shall include the Multi-Circuited condenser, 3/4 horse power condenser fan motors with 24 inch fan blades mounted in a venturi contoured air-scoop protected by plastic coated fan guards, and flooded headpressure controls. The compressors and condenser circuits shall be sized to operate at an average temperature differential between the ambient and condensing temperatures of 20°F.

CONTROL PANEL

The exterior mounted, weather proof, electrical control panel will be manufactured of 14 gauge galvanized steel which has been assembled, welded, de-burred and cleaned. The control panel shall include hinged access doors with a built-in fused disconnect switch inter-locked to shutoff all system electrical power when the doors are opened, circuit breakers and contactors for each compressor, required defrost time clocks, and circuit breakers, start capacitors, and fan cycle control thermostats for each of the condenser fan motors. A wiring diagram of the refrigeration system shall be permanently affixed to the inside of the refrigeration system. All internal wiring shall be held in place with fasteners and individually numbered. The wire numbers shall be shown on the wiring diagram

EVAPORATOR COILS

The evaporator assemblies, and the parts associated with them, will be mounted inside of the walk-ins. Each evaporator coil shall include a matching thermostatic expansion valve, liquid line solenoid valve and thermostat. In cases where two (2) or more evaporator coils are to be piped to a single compressor the thermostat and liquid line solenoid valve will be shipped loose to be mounted and wired at the job site.

INTERNAL REFRIGERATION PIPING

All of the internal refrigeration piping shall be extended to one side of the refrigeration system in a neat and orderly manner. Each set of piping shall have a label permanently affixed identifying the system it will service. All internal refrigeration piping shall be refrigerant grade A.C.R. or type L copper tubing. All tubing shall be held in place with Uni-Strut channels and clamps and protected with neoprene grommets. A minimum of 1/2 inch thick insulation shall cover all suction lines.

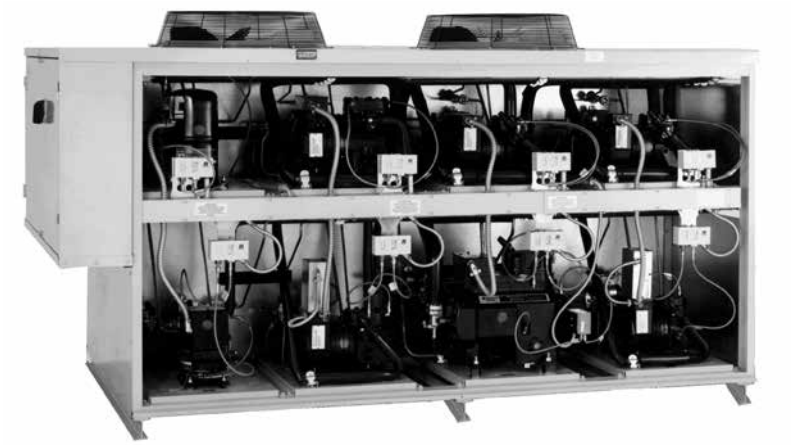
After circuiting the condenser shall be tested for leaks at a minimum pressure of 450 pounds per square inch/gauge (psig). After final assembly the entire system shall be tested for leaks at 250 psig and evacuated pressure test at 500 microns at the factory. The refrigeration system shall be shipped with a 55 psig charge of dry nitrogren.

ColdZone 1933 S. Vineyard Ave., Ontario, CA 91761 Phone: (800) 772-2653 Fax: (714) 529-8503 coldzone.htpg.com

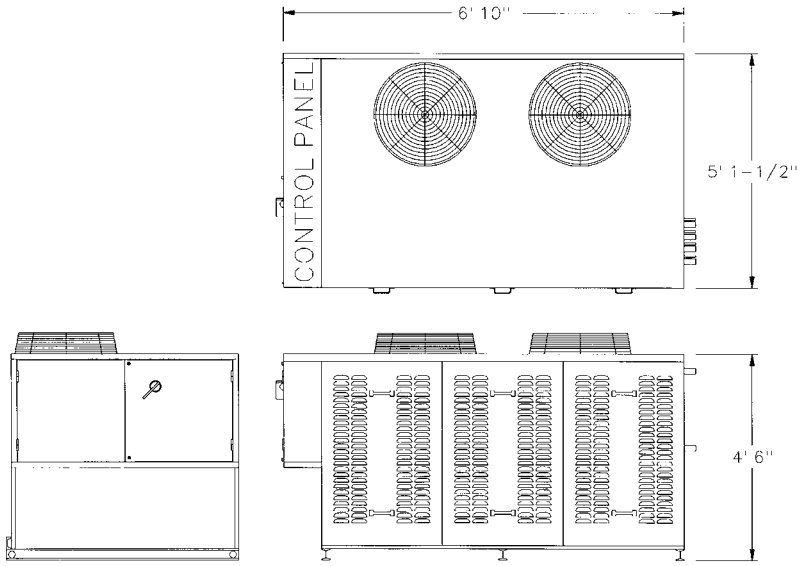
ColdZone

Model ET-1

Air Cooled Refrigeration Systems



DIMENSIONAL DATA



PHYSICAL DATA

Approx. Total HP*	Maximum Number of Comp. (Spaces)**	Number of Fans	Typical Overall Dimensions (In.)			Approx. Weight (lbs.)
			Length	Width	Height	
13.0	6	2	82	61 1/2	54	2250

* Total compressor HP will be determined by comp(s). used.

** 1/2 - 3 HP = 1 comp. space, 4 HP and larger = 2 comp. spaces.

COMPRESSOR DATA

System	Item	Fixture Description	Freon	Compressor	Voltage	Evaporator(s)	Voltage

Note: Compressors are designed with matching evaporator coil. Consult factory for specific electric data.

Specification subject to change without prior notice.

thermalrite

by CrownTonka California, Inc.

custom, modular cold storage







quality

value

service

design

warehouse systems • food service • environmental enclosures



quality

Thermalrite® has been manufacturing Walk-in Coolers and Freezers for the food service industry since 1988. Our goal is to manufacture the finest quality walk-ins available and provide you with an unsurpassed level of service. All of our walk-ins are CAD designed to your exact specifications. Our panels are engineered and built for easy installation. During each phase of the manufacturing process we scrutinize quality, fit and finish to ensure that you get the best possible product.

service

From Quotations to Engineering, from Manufacturing to Delivery and Installation, we offer you outstanding service. Our trained, experienced Inside Sales Team, provides helpful, knowledgeable service from inquiry to delivery. Our plants in California, Minnesota, and Tennessee provide close proximity to all markets.

value

We use only the best U. L. Class 1 Non-CFC Urethane insulation available. Thermalrite® and its suppliers have incurred considerable expense in the development of ENVIROFOAM, an environmentally sensitive urethane foam. Our insulation is designed to bond with our panels to give strength and durability.

All of this translates into superior insulating properties which keep your operating costs at a minimum.

design flexibility

Custom designs – indoor, outdoor, angular, rectangular or any combination are all available in a variety of finishes and in varying thickness of four, five or six inches. We serve the warehouse, food service, institutional and environmental industries with walk-in coolers and freezers. With seamless panels up to 30 feet in length, we are ideal for warehouse applications and long spans. Our modular construction allows for easy remodeling, relocation or expansion.

why thermalrite?

- Custom Designs at Standard Prices. You get the exact size and shape you need.
- In-house design and engineering. We can help you to determine what design or configuration will best fit your unique requirements.
- Strongest all-foam panels on the market. High density foam rail with metal facing and foam-in place bonding equals strong long lasting panels.
- Doors and frames that are second to none. Doors are a full four inches thick and frames are reinforced for strength.
- Highest insulation values and best fire rating add up to the best insulating material available. UL, class 1, Non CFC ENVIROFOAM saves energy costs and meets building code requirements.
- Environmentally Friendly ENVIROFOAM.
- NSF Certified, UL Listed, USDA Approved panels.
- Engineered and Built for ease of installation.
- Experience. Thermalrite® has been manufacturing walk-in coolers and freezers since 1988.
- Foaming conducted in temperature-controlled area and controlled by the latest computerized equipment to insure proper mix density and fill resulting in the finest insulated panel available.



- The best walk-in value on the market.
- Parts department to supply your needs correctly and quickly (usually within 24 hours).
- Three strategically located manufacturing plants for quick and cost-effective delivery throughout North America.
- One-stop-shop for your complete walk-in package; refrigeration, shelving, and installation – hassle-free convenience.
- We stand behind our product – we honor our obligations. Check out our record.

classifications*

- NSF Certified
- U.L., Class 1 listed Urethane foam insulation in all Thermalrite® walk-ins.
- USDA Approved Materials
- UL Electric
- State of New York, MEA
- California Bureau of Home Furnishings and Thermal Insulation License
- State of Oregon
- Wisconsin (DHILR)
- City of Houston

*Thermalrite® insulated panels are manufactured to meet local codes in most cities. It is incumbent upon the customer to consult with the local inspector to assure compliance.



thermalrite installation examples

food service

- Anaheim Arena- The Pond
- Burger King
- Cheesecake Factory
- Hard Rock Cafe
- MGM Grand Hotel
- Kaiser Hospital
- Bakersfield Country Club
- Scenic Heights Elementary- Minnesota
- Brown County Prison
- UCLA

environmental and scientific

- Seattle Zoo
- Santa Barbara Zoo
- Hughes Aircraft
- Allied Signal
- Themodynamics

architectural specifications

metal and finishes

Standard interior and exterior metal finish:

- 26 Ga. Bright stucco embossed galvanized steel

Optional finishes available

- 26 Ga. Painted stucco embossed galvanized steel. Standard colors available are white, black and almond. Optional colors are available by request.
- .032 Stucco embossed aluminum
- .040 Smooth white aluminum
- .040 Stucco embossed aluminum
- 22 Ga. Type 304 stainless steel #4 finish

Interior floor finishes

- .050 Smooth aluminum
- 24 Ga. Type 304 stainless steel with #2B finish
- .100 aluminum diamond thermalrite

Other gauges and finishes are available upon request.

insulation

Standard insulation is foamed-in-place Non-CFC U.L. Class 1 rated urethane foam. It has a thermal conductivity (K Factor) of .120* BTU/Hr/Sq. ft/Degrees/F/in. and overall heat transfer coefficient (U Factor) of not more than .030 BTU/Hr.Sq.Ft.

Class 1 urethane foam has a flame spread of 25 or less overall and smoke developed of less than 450. Recommended wall thickness is nominal 4″. Foam rail panels also available in 4″ - 6″ thickness.

panel construction

Walk-ins are all custom designed to fit the individual customers' needs. Each panel consists of an interior and exterior metal pan with structural, high density foam rail frame. These pans are separated by rigid foam-in place self-extinguishing urethane insulation which adheres to the interior of the pans providing increased structural strength. All panels have tongue and groove construction and gasket is applied to all joints forming an air-tight seal.

panel fasteners

All panels are joined together using a cam-locking fastener, operated with a hex wrench. Access holes are sealed with vinyl snap-in caps. Standard construction is cam-locking ceilings to walls; lag-down ceilings are also available.

floorless models

Alignment screed is furnished for all floorless models. Screeds are designed to be anchored to masonry floors to provide an accurate template for the erection of wall panels.

floor panels

Floors are built with metal bonded to exterior grade underlayment and foamed-inplace. Floors are capable of maintaining a load maximum of 1000lbs./sq/ft. when uniformly distributed, and are NSF certified.

walk-in accessories and features

Standard:

- 2 1/2″ Dial Thermometer
- 100 Watt incandescent light fixture with vapor proof globe
- Flush Mount OSHA press switch factory installed and wired to outside ceiling
- NSF Certified Construction
- UL Listed Class 1 Non-CFC Urethane Foam
- USDA Approved Materials

Optional

- Refrigeration Systems
- Roof Systems for outdoor applications
- Display Doors
- Double Acting Doors
- Strip Curtains
- Alarm Systems
- Digital Thermometers
- Storage Shelving
- Built in Wall Supports
- Heavy Duty Floor Plates
- Foamed in Place Electrical Boxes

door, jamb and hardware

Standard Thermalrite walk-in doors are self-closing, flush mount type.

Standard features:

- High quality heavy duty hardware with safety release
- Magnetic door gasket
- Heated jamb (freezer only)
- Heated threshold (freezer only)
- Heated pressure relief vent (freezer only)
- Doors up to 48″ width are pre-hung
- Heavy duty door frame

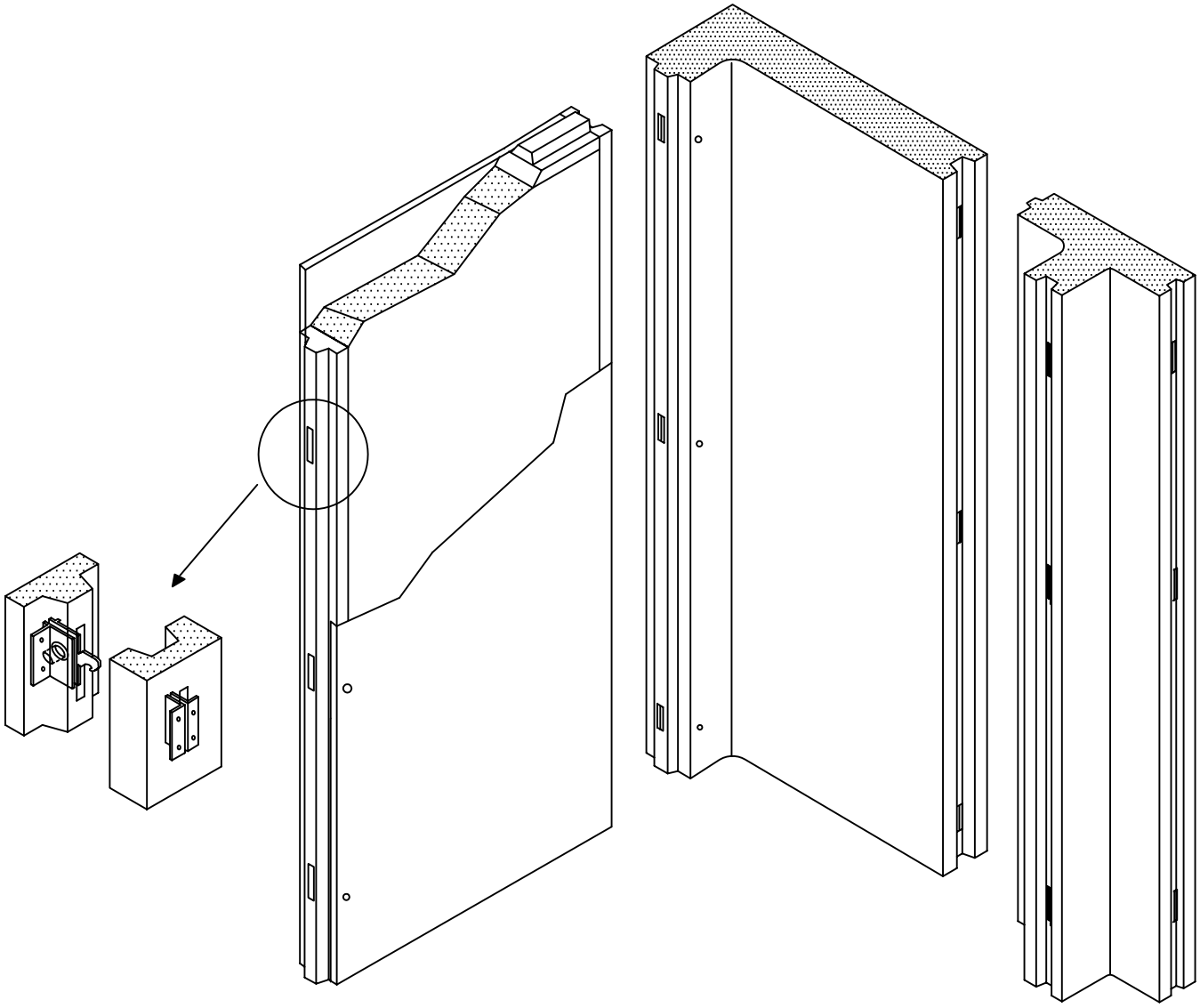
Optional Door Features and Accessories:

- Bi-parting doors
- Reach-in Service Doors
- Sliding Doors
- Heavy Duty Impact Plate
- View Ports

Thermalrite® reserves the right to change specifications without notice.

thermalrite
by CrownTonka California, Inc.
6514 East 26th Street • Commerce, CA 90040
(800) 290-7073 • sales@thermalrite.com
www.thermalrite.com

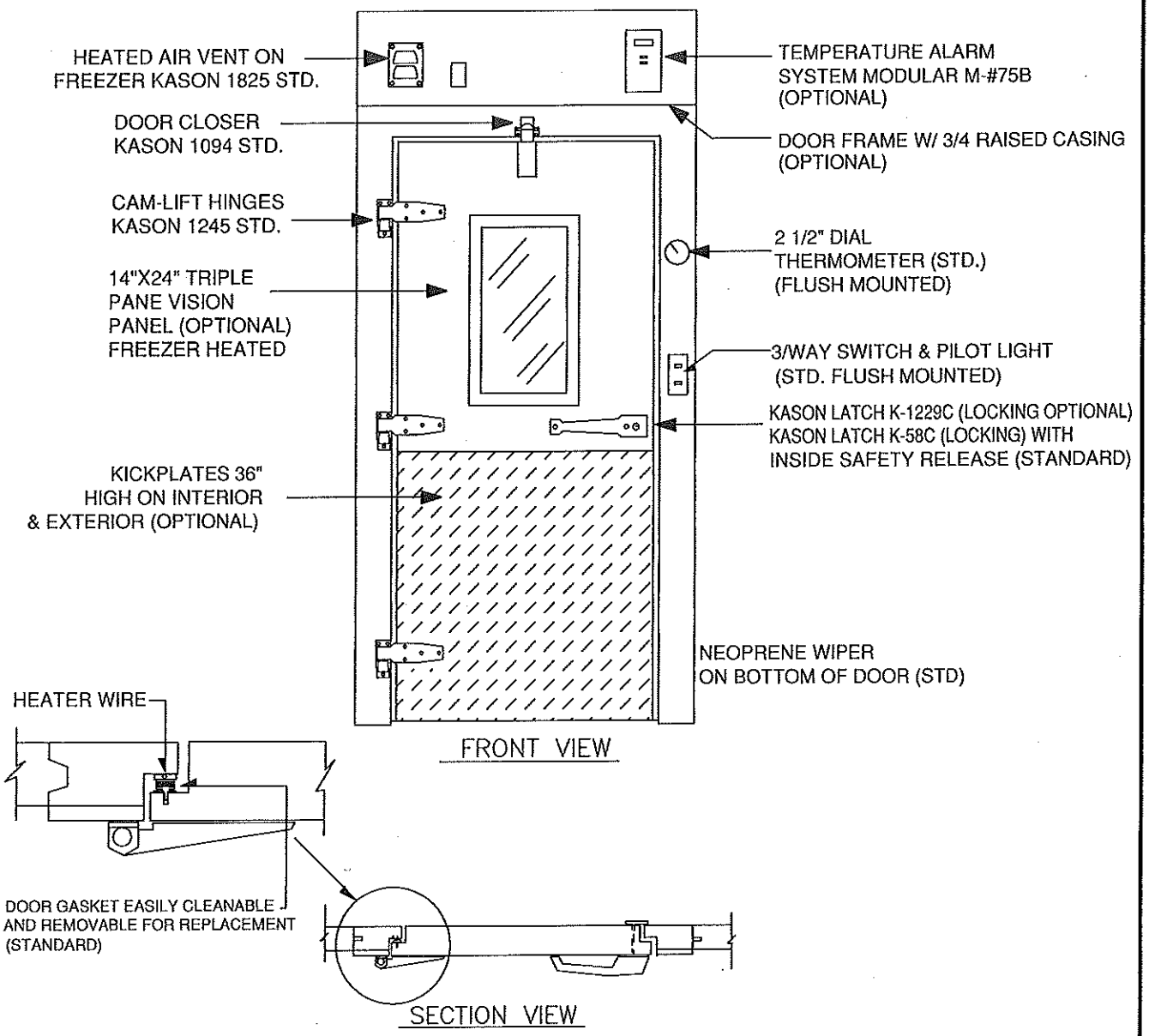
Typical Wall, "T", Corners



STANDARD WALL PANEL SIZES ARE 47" WIDE, CORNER SECTION
5 1/4" x ANY LENGTH (47") TO MEET CUSTOM REQUIREMENTS
WITH 1/4" RADIUS ON INTERIOR FOR N.S.F. REQUIREMENTS.
WALL PANEL HEIGHT PER CUSTOMER REQUEST (FROM 0" UP TO 30'-0" HIGH).

thermalrite
WALK-IN COOLER AND FREEZERS
4215 E. AIRPORT DRIVE
ONTARIO, CA. 91761
phone (909) 605-6419 fax (909) 605-6413

Door and Door Section Assembly



1.1-10 STANDARD HINGED WALK-IN DOOR 36"X78"
FREEZER DOOR - HEATER CABLE ON 4 SIDES OF DOOR SECTION.

OPTIONAL: DOOR CLOSER INTERNATIONAL MODEL #653,YALE MODEL #PA-1405 OR NORTON SERIES #7500
ON INTERIOR DIGITAL THERMOMETER MODULARM MODEL #75 TEMPERATURE ALARM OR EQUAL.
4" DIAL THERMOMETER.

thermalrite®
WALK-IN COOLER AND FREEZERS
Phone: (800) 290-7078
Plants in: California, Tennessee, Minnesota

2-A

0027C DEADBOLT LOCKING HANDLE



- Deadbolt security for walk-ins at the economy of a locking pull handle
- Deadbolt is secured using cylinder lock or padlock, or both
- Deadbolt can be locked in open position
- Self-adjusts to wall thickness variations
- Standard, twist-off glow in the dark inside release knob prevents lock-ins
- Two 1/4 turn inside release options meet ADA requirements for fast exit
  - 1/4 turn Inside Release, shown above with handle
  - 27c 1/4 Turn Low Conduction Inside Release, shown to the right
- Locking mechanism located outside resists freeze-up

Flush offset and 4" thick wall standard. Other wall thicknesses available. Consult factory.
1-5/8" offset option listed in model number table; Available down to 1/2"

U.S. Patent No.: 6,526,788
1/4 Turn Inside Release Patent No.: 9,068,376 & 6,526,788

Specifications

LATCH

MATERIAL:

Die-cast Zamak handle housing, tongue and strike.

FINISHES:

Polished chrome and brushed chrome.

PACKAGING

6 per carton

LATCH

LOCKING MECHANISMS:

Cylinder lock (may be keyed alike or randomly). Accepts 5/16" (7.9mm) dia. shank padlock (customer supplied).

MOUNTING:

Drilled and countersunk for 1/4" (6.4mm) fillister head screws.

STRIKE

MATERIAL:

Die-cast Zamak housing, brass rod, glow-in-the-dark polycarbonate turn-knob.

FINISHES:

Housing same as latch.

1248 SPRING ASSISTED HINGE



- Spring mechanism adds extra closing force to overcome air resistance on heavy walk-in doors
- Special high-lift cam system outperforms similar spring hinges
- Cam-rise action reduces gasket wear, even with irregular floors
- Built-in dwell holds door open beyond 130°
- Simple manual operation reverses hinges for use on right or left-opening door

U.S. Trademark: 2,415,070

Specifications

MATERIAL

High pressure die-cast zinc with self-lubricating nylon cam.

MOUNTING

WEIGHT

Approx. 19.5 lb (8.85 kg) per carton

PACKAGING

6 each

1094 SURECLOSE™ HYDRAULIC DOOR CLOSERS



- Powerful gas-loaded hydraulic cylinder guarantees controlled closure
- Exposed and concealed mounting models
- Solid steel enclosed housing and bend-resistant hook assure long wear in heavy use
- Extra-wide hook ensures roller pick-up and overcomes alignment problems
- Life-cycle tested to operate reliably even after a half-million closures
- Perfect complement for Kason Walk-in hinges and latches where self-closing doors with controlled closure are needed
- Mounting slots on hook allow for easy adjustment to compensate for door sag, keeping roller aligned with hook for proper function

U.S. Trademarks: 3,212,100 & 5,809,887

MATERIAL
Heavy gauge steel. Housing and hook also available in stainless steel
FINISH
Polished or brushed chrome, stainless steel, or powder coat
MOUNTING
Holes drilled for No. 10 (5.0 mm) screws (included).

57 AMLAJACK BLVD. NEWNAN, GA 30265
1-800-935-2766
WWW.KASONIND.COM

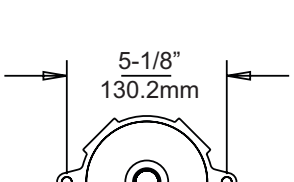
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LOCATION: _____
IDN# _____ QUANITY: _____
CATALOG# _____

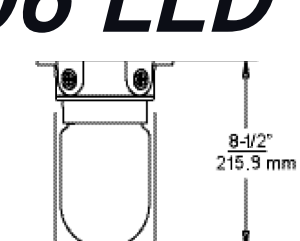
CAT NO. 1806LED

LIGHT FIXTURE AND OPTIC GLOBE, LED

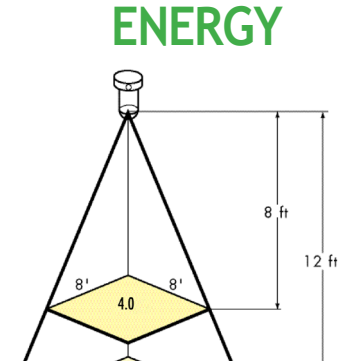
1806 LED FIXTURE







SAVES MONEY AND ENERGY



FEATURES AND SPECIFICATIONS

- Lumanaire: Rating IP-65 for wet and cold environments
- Light Output: 980 lumens
- 85 lumens/watt- exceeds Federal Energy Act requirements
- Bright 5000K color temperature
- Rated 50,000 hour life
- No Ultraviolet Emission: Does Not Attact Insects
- Ideal operating temperature range from -40F to 70F (-40C to 21C)
- Power: 120 VAC at 60 Htz (line voltage)
- Rating: 11.5 watt, 120 V
- Five 1/2 NPT conduit connections
- GU24 socket
- Globe: Lexan with Light Intensifying Focused Optics (LIFO)
- Housing: Aluminum
- 5 year limited warranty on fixture
- 3 year limited warranty on lamp
- RoHS compliant and NSF listed
- Lamps and fixture cULus listed
- U.S. Patent Pending

LIGHT DISTRIBUTION FOR 1806 LED

Height in Feet	Average FC for Single Fixture Over Indicated Area	
	8' x 8'	12' x 12'
5	5.5	2.9
8	4.0	2.3
9	-	2.1
12	-	1.8
13	-	-
16	-	-
17	-	-
20	-	-

Model No.	Model Description
1806LED000	Fixture w/ Lamp and Optic Globe
1806LED014	Replacement Lamp, GU-24, 120 VAC, 11.5W, 60 HZ, 5000K Color Temperature

Above Packaging: 25 per Carton, approx. 17 lb. (7.7kg)

ACCESSORIES

11901A00005.....LOW BAY MOTION SENSOR
11901A00007.....HIGH BAY MOTION SENSOR
11806LED014.....REPLACEMENT LAMP

NSF COMPONENT
c UL us LISTED
GreenGuard BY KASON INDUSTRIES
LM-79 TESTED
UL FILE No.E333932

APPROVALS:

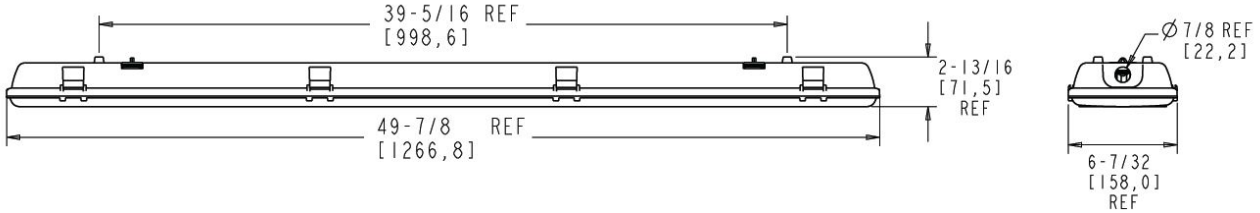
DATE:

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GREENGUARD LED LIGHTING



ITEM # 1810LX4000



1810LX4000 LED FIXTURE

- High output LED technology with best-in-class efficiency
- Deisgned for high ceilings and larger work rooms with greater foot candle requirements
- LED technology assures sustainable energy savings over the life of the fixture. Four-foot, voporproof fixture is supplied complete with low energy LEDs.
- Payback in as little as six months. Reduced lighting wattage and heat generation lower utility cost. LED fixtures are rated +50,000 hr/life. Find your specific savings using the Kason Payback Calculator (Kas-Calc).
- Specifically designed for wet and low temperature environments. Operating temperature range from -40°F to 104°F (-40°C to 40°C). Luminaire meets IP-65 for wet and cold applications and is LM-79 and LM-80 tested.
- Reach full light level immediately even in lowest temperatues.
- Easily replaces less energy-efficient lighting.

SPECIFICATIONS

SIZE
Nominal 48". Overall dimensions: 49-7/8"
L x 6-7/32"
W x 4-7/32"
H (1267 x 158 x 107mm)

HOUSING
Injection-molded polycarbonate with integral gasket

DIFFUSER
Clear, molded high impact polycarbonate diffuser; stainless steel latches for easy access to lamps

E-Z MOUNTING
Attach two, snap-in brackets to ceiling; snap fixture in place, and wire

POWER
120 - 277VAC @ 50/60 Hz (universal voltage); one hole provided with knockoutat opposite end. Three knockouts on back. Complies with NEC regulations
UListed

39W total
0.33 amps
4000 lumens
96 lumens/watt

PRISON PACKAGE
Tamper resistant fastener kit option available

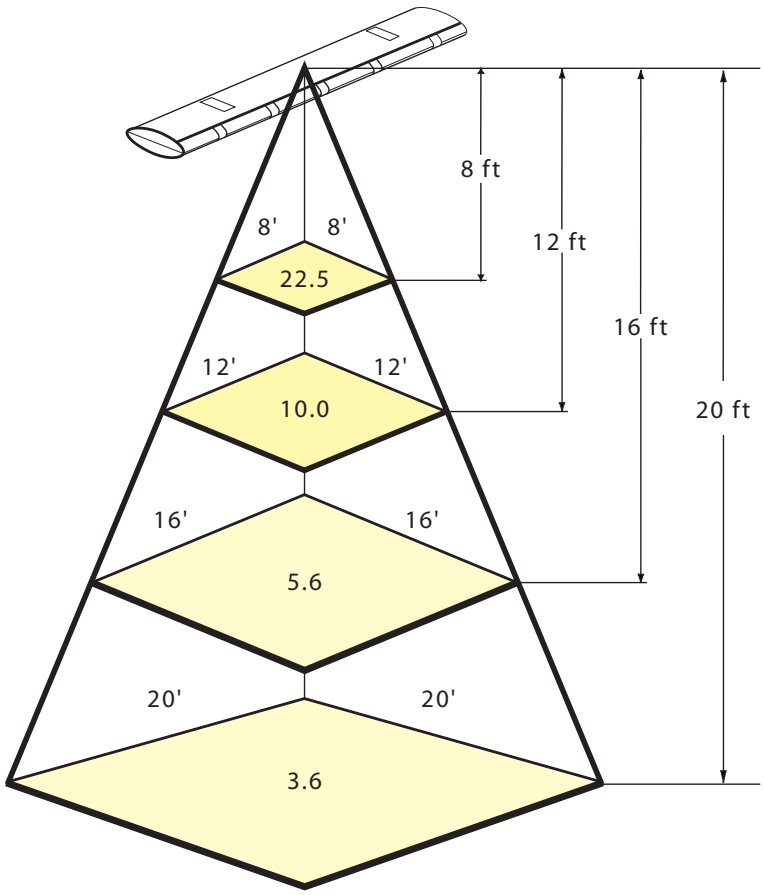
Model No.	Item	Weight
11810LX4000	4' LED Light Fixture	6.3 lbs./fixture
11810LX40CE	4' LED Light Fixture, CE	6.3 lbs./fixture
91810EZ0357	Tamper Resistant Latch Kit (Qty 8)	
91810LX040R	LED Tray Light Engine, 40W	
91810LX0852	Diffuser	
91810EZ0356	Latch Assembly (Pack of 8)	

*Rebates apply through local utility companies.

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1810LX4000 LED LIGHT DISTRIBUTION

LIGHT DISTRIBUTION FOR 1810LX4000 LED				
Height in Feet	Average FC for Single Fixture Over Indicated Area			
	8′ x 8′	12′ x 12′	16′ x 16′	20′ x 20′
5	30.9	17	10.7	7.4
8	22.5	13.2	8.7	6.2
9	-	12.2	8.2	5.9
12	-	10.0	6.9	5.1
13	-	-	6.5	4.8
16	-	-	5.6	4.2
17	-	-	-	4.0
20	-	-	-	3.6



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SMARTRITE™ BY EVERIDGE®

Walk-In Monitor System

We have set the new standard in the walk-in refrigeration industry with the introduction of our SmartRite touch screen monitor. Designed to provide accurate monitoring of your walk-in cooler and freezer temperature, relative humidity percentage, with an advanced water-resistant touch screen interface.
The SmartRite monitor will help maintain your perishables at optimum quality and safety, while reducing energy costs. The monitor incorporates a range of functions including Bluetooth and WiFi capabilities, keeping the information available at your fingertips 24 hours a day.

The 5" TFT full color display is the largest available on the market today. The SmartRite Monitor's hi-resolution graphics allow for viewing from all angles. Its user-friendly capacitive touch panel simplifies operation.

The SmartRite touch screen monitor is suitable for use with CrownTonka, ICS, and ThermalRite walk-ins, meaning that it is the ideal solution for any walk-in storage application.

UNIQUE TO SMARTRITE

- 5" TFT full-color touchscreen display
- Cloud monitoring of RH%, temperature, and alarms via WIFI
- Ability to fully monitor two rooms, front to back, with just one alarm
- Humidity (RH%) and temperature readings utilizing a single digital sensor
- 2 dedicated door/jamb heaters outputs
- Dedicated Vu-port heater output
- Evaporator fan switch
- 3 external light switch inputs
- 3 motion detector inputs
- 3 panic inputs
- Interconnection capabilities between alarm/monitor systems for light and panic operation from multiple doors



SMARTRITE™ BY EVERIDGE®

Walk-In Monitor System

PRODUCT HIGHLIGHTS

- Light control
- Door heater and Vu-port heater control
- Room temperature and relative humidity monitoring/ logging for two rooms – on-board data storage with automatic roll-over
- Audio-visual alarms, with remote annunciation/ notification capabilities
- Door open monitor/alarm
- High/low-temperature alarm
- Panic/entrapment alarm
- Power failure alarm/monitoring
- Battery backup
- Real-time clock with auto daylight saving
- Bluetooth and WIFI capabilities via smartphone app
- Third-party BAS (Building Automation System) compatibility
- UL authorization as unlisted component approved for use on Everidge walk-ins
- NSF authorization as evaluated component approved for use on Everidge walk-ins
- Multiway light control
- Automated HAACP logging and tracking



PANIC/ENTRAPMENT ALARM



LIGHT CONTROL

EVERIDGE®
Every step of the way®

CROWNTONKA® ICS® LOTEMP DOORS™ PREPRITE® THERMALRITE®

Proud to be family-owned.

© LPL 10/2022

Item # _____

Job _____

SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
WIRE SHELVING

Super Adjustable™ Super Erecta Wire Shelving is the most advanced and innovative wire storage system available.

- **Maximum Space Utilization:** The Corner Release System encourages repositioning of shelves during initial assembly to reclaim wasted vertical space. In some cases, reclaimed vertical space will allow an extra shelving tier to be added to the storage unit resulting in a 25% increase in storage capacity!
- **Easily Assembled:** The unique Corner Release System enables quick and easy repositioning of shelves during the initial set up to accommodate different package or container sizes. "Total Assembly" is complete only after the shelves are properly spaced to maximize storage. SiteSelect™ Posts, with the double-groove visual guide feature, have circular grooves at 1" (25mm) increments and are numbered at 2" (51mm) intervals to easily identify proper shelf locations.
- **Easily Adjustable:** The unique shelf design and SiteSelect™ Posts enable "tool-free", quick adjustment at 1" (25mm) increments along the entire height of the post.
- **Improved Rigidity:** An enhanced Corner Release System has made Super Adjustable™ the most rigid, easily adjustable shelving system ever.
- **Strong:** Super Adjustable™ shelves hold as much weight as traditional Super Erecta wire shelving. Stationary units hold a maximum of 2,000 lb. (910kg). Maximum weight capacity per shelf (48" [1219mm] or shorter = 800 lb. [364kg]; longer than 48" [1219mm] = 600 lb. [273kg])
- **Choice of Finishes:** Super Adjustable™ Super Erecta shelving is available in a variety of finishes: chrome-plated for dry storage; Metroseal 3™ with antimicrobial product protection and Type 304 stainless steel for corrosive environments.
- **Accessories:** Compatible with the entire system of Super Erecta shelves and accessories. See Catalog Sheets 10.04, 10.05, 10.06 for more information.



Dry Storage — Chrome

NSF



Corner Release System

Super Adjustable™ Advantage . . .



Easy "no tool" shelf adjustment

1" 25mm spacing minimizes dead space

Efficient use of space allows more storage levels to be added.

Storage efficiency can increase by 25% or more!



*MICROBAN® and the MICROBAN® symbol are registered trademarks of the Microban Products Company, Huntersville, NC.

InterMetro Industries Corporation
North Washington Street
Wilkes-Barre, PA 18705
www.metro.com

10.01A

Job _____

SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
WIRE SHELVING

Dimensions

Super Adjustable™ Super Erecta Wire Shelving

Model No. Chrome	Model No. Metroseal 3	Model No. Stainless	Shelf Width/Length (in.)	(mm)	Approx. Pkd. Wt. (lbs.)	(kg)
A1424NC	A1424NK3	A1424NS	14x24	355x610	6	2.7
A1430NC	A1430NK3	A1430NS	14x30	355x760	7	3.2
A1436NC	A1436NK3	A1436NS	14x36	355x914	8	3.6
A1442NC	A1442NK3	A1442NS	14x42	355x1066	9 1/2	4.3
A1448NC	A1448NK3	A1448NS	14x48	355x1219	10 1/2	4.7
A1460NC	A1460NK3	A1460NS	14x60	355x1524	14	6.3
A1472NC	A1472NK3	A1472NS	14x72	355x1829	17	7.7
A1824NC	A1824NK3	A1824NS	18x24	457x610	7	3.2
A1830NC	A1830NK3	A1830NS	18x30	457x760	8	3.6
A1836NC	A1836NK3	A1836NS	18x36	457x914	9 1/2	4.3
A1842NC	A1842NK3	A1842NS	18x42	457x1066	11	5.0
A1848NC	A1848NK3	A1848NS	18x48	457x1219	12	5.4
A1854NC	A1854NK3	A1854NS	18x54	457x1370	14 1/2	6.6
A1860NC	A1860NK3	A1860NS	18x60	457x1524	17	7.7
A1872NC	A1872NK3	A1872NS	18x72	457x1829	20	9.1
A2124NC	A2124NK3	A2124NS	21x24	530x610	8	3.6
A2130NC	A2130NK3	A2130NS	21x30	530x760	9	4.1
A2136NC	A2136NK3	A2136NS	21x36	530x914	11	5.0
A2142NC	A2142NK3	A2142NS	21x42	530x1066	12	5.4
A2148NC	A2148NK3	A2148NS	21x48	530x1219	14	6.4
A2154NC	A2154NK3	A2154NS	21x54	530x1370	16	7.3
A2160NC	A2160NK3	A2160NS	21x60	530x1524	18	8.2
A2172NC	A2172NK3	A2172NS	21x72	530x1829	24	10.9
A2424NC	A2424NK3	A2424NS	24x24	610x610	9	4.1
A2430NC	A2430NK3	A2430NS	24x30	610x760	11	5.0
A2436NC	A2436NK3	A2436NS	24x36	610x914	13	5.9
A2442NC	A2442NK3	A2442NS	24x42	610x1066	15	6.8
A2448NC	A2448NK3	A2448NS	24x48	610x1219	16	7.3
A2454NC	A2454NK3	A2454NS	24x54	610x1370	18	8.6
A2460NC	A2460NK3	A2460NS	24x60	610x1524	21	9.5
A2472NC	A2472NK3	A2472NS	24x72	610x1829	26	11.8
A3036NC			30x36	760x914	15	6.8
A3048NC			30x48	760x1219	21	9.5
A3060NC			30x60	760x1524	26 1/2	11.8
A3072NC			30x72	760x1829	31	14.0
A3636NC			36x36	914x914	18	8.2
A3648NC			36x48	914x1219	23	10.4
A3660NC			36x60	914x1524	29	13.1
A3672NC			36x72	914x1829	34 1/2	15.4

NOTE: MICROBAN® protects the Metroseal 3 coating from bacteria, mold, mildew and fungi that cause odors, stains and product degradation. For Metroseal 3 shelving information see sheet #10.10A.

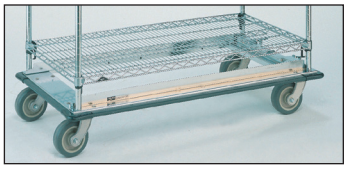


All Environments — Metroseal 3™ with *Microban® Antimicrobial Product Protection

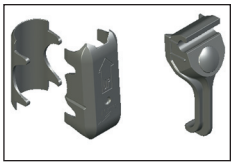
Mobile Options



Stem Casters



Dolly Trucks



Replacement Parts
Each kit includes components for one original Super Adjustable or Super Adjustable shelf; (4) wedges, (4) sleeves, (4) shelf releases.
Model No. SAKITA2

SiteSelect™ Posts

STATIONARY Actual Height* (in.)	(mm)	Model No. Plated	Model No. Metroseal 3	Model No. Stainless	MOBILE Actual Height* (in.)	(mm)	Model No. Plated	Model No. Metroseal 3	Model No. Stainless	Approx. Pkd. Wt. (lbs.)	(kg)
7 3/8	187	7P	7PK3	7PS	6 3/4	171	7UP	7UPK3	7UPS	1/2	0.3
14 3/8	365	13P	13PK3	13PS	13 3/4	349	13UP	13UPK3	13UPS	1	0.5
28 3/8	720	27P	27PK3	27PS	27 3/4	704	27UP	27UPK3	27UPS	1 3/4	0.75
34 3/8	873	33P	33PK3	33PS	33 3/4	857	33UP	33UPK3	33UPS	2	0.9
54 7/16	1382	54P	54PK3	54PS	53 13/16	1366	54UP	54UPK3	54UPS	3	1.4
62 7/16	1585	63P	63PK3	63PS	61 13/16	1570	63UP	63UPK3	63UPS	3 1/2	1.6
—	—	—	—	—	69 3/4	1771	70UP	—	—	3 3/4	1.7
74 1/2	1892	74P	74PK3	74PS	73 7/8	1876	74UP	74UPK3	74UPS	4	1.8
86 1/2	2197	86P	86PK3	86PS	85 7/8	2181	86UP	86UPK3	86UPS	4 1/2	2.0
96 1/2	2450	**96P	96PK3	96PS						5 1/2	2.5

*Actual height for the stationary post includes the post cap and the leveling bolt completely tightened.

Important: When ordering by components remember that for maximum stability, units should be kept as wide and low as possible.

All Metro Catalog Sheets are available on our Web Site: **www.metro.com**

InterMetro Industries Corporation
North Washington Street, Wilkes-Barre, PA 18705
Phone: 570-825-2741 • Fax: 570-825-2852

For Product Information:
U.S. and Canada: 1-800-992-1776
Outside U.S. and Canada: www.metro.com/contactus

L02-006A
Printed in U.S.A. Rev. 2/17

Information and specifications are subject to change without notice. Please confirm at time of order.

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SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
Adjustable Wire Shelving

0027C DEADBOLT LOCKING HANDLE



- Deadbolt security for walk-ins at the economy of a locking pull handle
- Deadbolt is secured using cylinder lock or padlock, or both
- Deadbolt can be locked in open position
- Self-adjusts to wall thickness variations
- Standard, twist-off glow in the dark inside release knob prevents lock-ins
- Two 1/4 turn inside release options meet ADA requirements for fast exit
  - 1/4 turn Inside Release, shown above with handle
  - 27c 1/4 Turn Low Conduction Inside Release, shown to the right
- Locking mechanism located outside resists freeze-up

Flush offset and 4" thick wall standard. Other wall thicknesses available. Consult factory. 1-5/8" offset option listed in model number table; Available down to 1/2"

U.S. Patent No.: 6,526,788
1/4 Turn Inside Release Patent No.: 9,068,376 & 6,526,788

Specifications

LATCH

MATERIAL:

Die-cast Zamak handle housing, tongue and strike.

FINISHES:

Polished chrome and brushed chrome.

PACKAGING

6 per carton

LATCH

LOCKING MECHANISMS:

Cylinder lock (may be keyed alike or randomly). Accepts 5/16" (7.9mm) dia. shank padlock (customer supplied).

MOUNTING:

Drilled and countersunk for 1/4" (6.4mm) fillister head screws.

STRIKE

MATERIAL:

Die-cast Zamak housing, brass rod, glow-in-the-dark polycarbonate turn-knob.

FINISHES:

Housing same as latch.

1248 SPRING ASSISTED HINGE



- Spring mechanism adds extra closing force to overcome air resistance on heavy walk-in doors
- Special high-lift cam system outperforms similar spring hinges
- Cam-rise action reduces gasket wear, even with irregular floors
- Built-in dwell holds door open beyond 130°
- Simple manual operation reverses hinges for use on right or left-opening door

U.S. Trademark: 2,415,070

Specifications

MATERIAL

High pressure die-cast zinc with self-lubricating nylon cam.

MOUNTING

WEIGHT

Approx. 19.5 lb (8.85 kg) per carton

PACKAGING

6 each

1094 SURECLOSE™ HYDRAULIC DOOR CLOSERS



- Powerful gas-loaded hydraulic cylinder guarantees controlled closure
- Exposed and concealed mounting models
- Solid steel enclosed housing and bend-resistant hook assure long wear in heavy use
- Extra-wide hook ensures roller pick-up and overcomes alignment problems
- Life-cycle tested to operate reliably even after a half-million closures
- Perfect complement for Kason Walk-in hinges and latches where self-closing doors with controlled closure are needed
- Mounting slots on hook allow for easy adjustment to compensate for door sag, keeping roller aligned with hook for proper function

U.S. Trademarks: 3,212,100 & 5,809,887

MATERIAL
Heavy gauge steel. Housing and hook also available in stainless steel
FINISH
Polished or brushed chrome, stainless steel, or powder coat
MOUNTING
Holes drilled for No. 10 (5.0 mm) screws (included).

57 AMLAJACK BLVD. NEWNAN, GA 30265
1-800-935-2766
WWW.KASONIND.COM

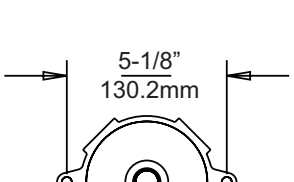
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LOCATION: _____
IDN# _____ QUANITY: _____
CATALOG# _____

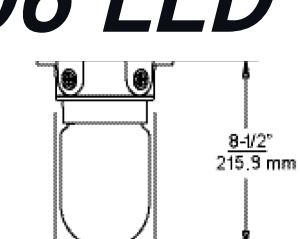
CAT NO. 1806LED

LIGHT FIXTURE AND OPTIC GLOBE, LED

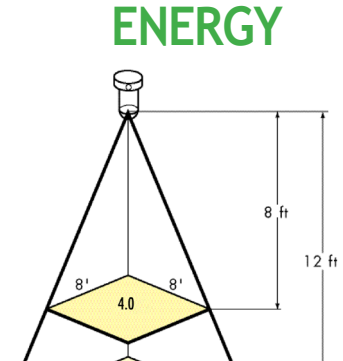
1806 LED FIXTURE







SAVES MONEY AND ENERGY



FEATURES AND SPECIFICATIONS

- Lumanaire: Rating IP-65 for wet and cold environments
- Light Output: 980 lumens
- 85 lumens/watt- exceeds Federal Energy Act requirements
- Bright 5000K color temperature
- Rated 50,000 hour life
- No Ultraviolet Emission: Does Not Attact Insects
- Ideal operating temperature range from -40F to 70F (-40C to 21C)
- Power: 120 VAC at 60 Htz (line voltage)
- Rating: 11.5 watt, 120 V
- Five 1/2 NPT conduit connections
- GU24 socket
- Globe: Lexan with Light Intensifying Focused Optics (LIFO)
- Housing: Aluminum
- 5 year limited warranty on fixture
- 3 year limited warranty on lamp
- RoHS compliant and NSF listed
- Lamps and fixture cULus listed
- U.S. Patent Pending

LIGHT DISTRIBUTION FOR 1806 LED

Height in Feet	Average FC for Single Fixture Over Indicated Area	
	8' x 8'	12' x 12'
5	5.5	2.9
8	4.0	2.3
9	-	2.1
12	-	1.8
13	-	-
16	-	-
17	-	-
20	-	-

Model No.	Model Description
1806LED000	Fixture w/ Lamp and Optic Globe
1806LED014	Replacement Lamp, GU-24, 120 VAC, 11.5W, 60 HZ, 5000K Color Temperature

Above Packaging: 25 per Carton, approx. 17 lb. (7.7kg)

ACCESSORIES

11901A00005.....LOW BAY MOTION SENSOR
11901A00007.....HIGH BAY MOTION SENSOR
11806LED014.....REPLACEMENT LAMP

NSF COMPONENT
c UL us LISTED
GreenGuard BY KASON INDUSTRIES
LM-79 TESTED
UL FILE No.E333932

APPROVALS:

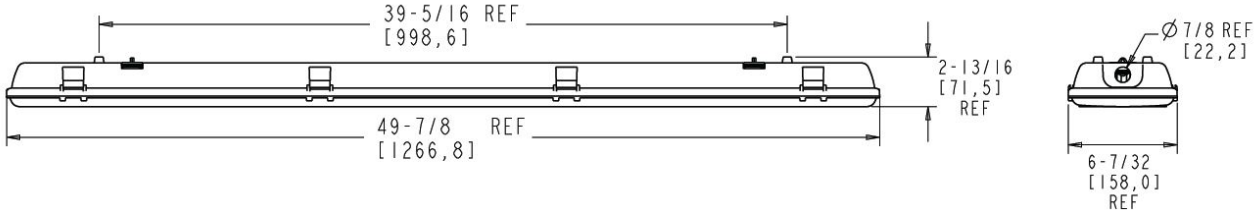
DATE:

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GREENGUARD LED LIGHTING



ITEM # 1810LX4000



GreenGuard c UL us COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV = ISO 9001 = FC NSF COMPONENT CE RoHS Compliant DLC LISTED

1810LX4000 LED FIXTURE

- High output LED technology with best-in-class efficiency
- Deisgned for high ceilings and larger work rooms with greater foot candle requirements
- LED technology assures sustainable energy savings over the life of the fixture. Four-foot, voporproof fixture is supplied complete with low energy LEDs.
- Payback in as little as six months. Reduced lighting wattage and heat generation lower utility cost. LED fixtures are rated +50,000 hr/life. Find your specific savings using the Kason Payback Calculator (Kas-Calc).
- Specifically designed for wet and low temperature environments. Operating temperature range from -40°F to 104°F (-40°C to 40°C). Luminaire meets IP-65 for wet and cold applications and is LM-79 and LM-80 tested.
- Reach full light level immediately even in lowest temperatues.
- Easily replaces less energy-efficient lighting.

SPECIFICATIONS

SIZE
Nominal 48". Overall dimensions: 49-7/8" L x 6-7/32" W x 4-7/32" H (1267 x 158 x 107mm)

HOUSING
Injection-molded polycarbonate with integral gasket

DIFFUSER
Clear, molded high impact polycarbonate diffuser; stainless steel latches for easy access to lamps

E-Z MOUNTING
Attach two, snap-in brackets to ceiling; snap fixture in place, and wire

POWER
120 - 277VAC @ 50/60 Hz (universal voltage); one hole provided with knockoutat opposite end. Three knockouts on back. Complies with NEC regulations UListed

39W total
0.33 amps
4000 lumens
96 lumens/watt

PRISON PACKAGE
Tamper resistant fastener kit option available

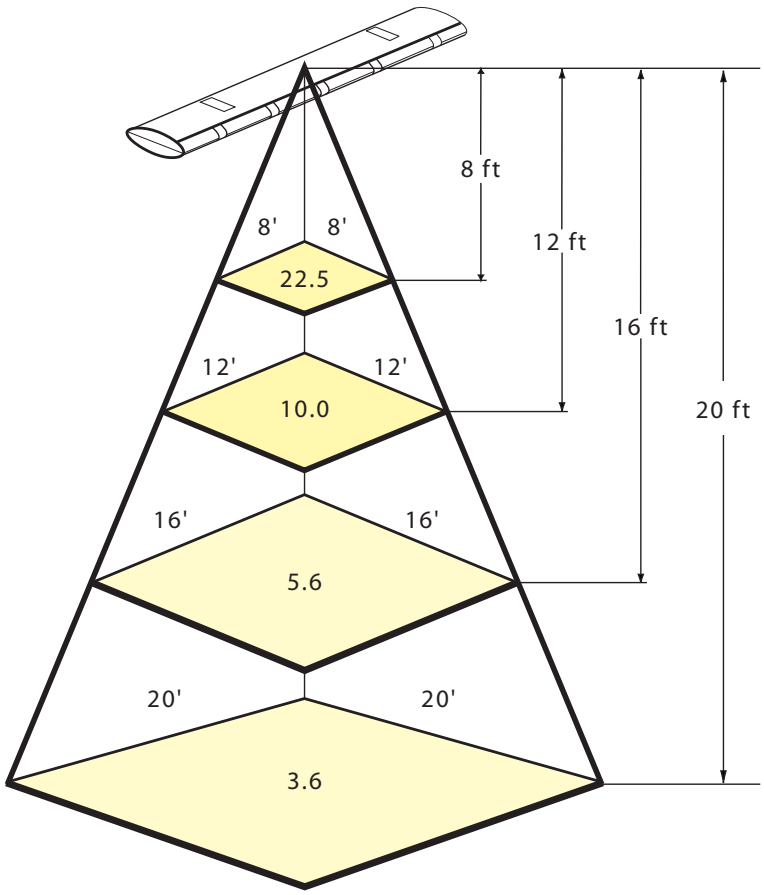
Model No.	Item	Weight
11810LX4000	4' LED Light Fixture	6.3 lbs./fixture
11810LX40CE	4' LED Light Fixture, CE	6.3 lbs./fixture
91810EZ0357	Tamper Resistant Latch Kit (Qty 8)	
91810LX040R	LED Tray Light Engine, 40W	
91810LX0852	Diffuser	
91810EZ0356	Latch Assembly (Pack of 8)	

*Rebates apply through local utility companies.

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KASON®

1810LX4000 LED LIGHT DISTRIBUTION

LIGHT DISTRIBUTION FOR 1810LX4000 LED				
Height in Feet	Average FC for Single Fixture Over Indicated Area			
	8′ x 8′	12′ x 12′	16′ x 16′	20′ x 20′
5	30.9	17	10.7	7.4
8	22.5	13.2	8.7	6.2
9	-	12.2	8.2	5.9
12	-	10.0	6.9	5.1
13	-	-	6.5	4.8
16	-	-	5.6	4.2
17	-	-	-	4.0
20	-	-	-	3.6



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SMARTRITE™ BY EVERIDGE®

Walk-In Monitor System

We have set the new standard in the walk-in refrigeration industry with the introduction of our SmartRite touch screen monitor. Designed to provide accurate monitoring of your walk-in cooler and freezer temperature, relative humidity percentage, with an advanced water-resistant touch screen interface.
The SmartRite monitor will help maintain your perishables at optimum quality and safety, while reducing energy costs. The monitor incorporates a range of functions including Bluetooth and WiFi capabilities, keeping the information available at your fingertips 24 hours a day.

The 5" TFT full color display is the largest available on the market today. The SmartRite Monitor's hi-resolution graphics allow for viewing from all angles. Its user-friendly capacitive touch panel simplifies operation.

The SmartRite touch screen monitor is suitable for use with CrownTonka, ICS, and ThermalRite walk-ins, meaning that it is the ideal solution for any walk-in storage application.

UNIQUE TO SMARTRITE

- 5" TFT full-color touchscreen display
- Cloud monitoring of RH%, temperature, and alarms via WIFI
- Ability to fully monitor two rooms, front to back, with just one alarm
- Humidity (RH%) and temperature readings utilizing a single digital sensor
- 2 dedicated door/jamb heaters outputs
- Dedicated Vu-port heater output
- Evaporator fan switch
- 3 external light switch inputs
- 3 motion detector inputs
- 3 panic inputs
- Interconnection capabilities between alarm/monitor systems for light and panic operation from multiple doors



SMARTRITE™ BY EVERIDGE®

Walk-In Monitor System

PRODUCT HIGHLIGHTS

- Light control
- Door heater and Vu-port heater control
- Room temperature and relative humidity monitoring/ logging for two rooms – on-board data storage with automatic roll-over
- Audio-visual alarms, with remote annunciation/ notification capabilities
- Door open monitor/alarm
- High/low-temperature alarm
- Panic/entrapment alarm
- Power failure alarm/monitoring
- Battery backup
- Real-time clock with auto daylight saving
- Bluetooth and WIFI capabilities via smartphone app
- Third-party BAS (Building Automation System) compatibility
- UL authorization as unlisted component approved for use on Everidge walk-ins
- NSF authorization as evaluated component approved for use on Everidge walk-ins
- Multiway light control
- Automated HAACP logging and tracking



PANIC/ENTRAPMENT ALARM



LIGHT CONTROL

EVERIDGE®
Every step of the way®

CROWNTONKA® ICS® LOTEMP DOORS™ PREPRITE® THERMALRITE®

Proud to be family-owned.

Walk-In Coolers/Freezers • Restoration & Replacement Doors • Cook-Chill Specialty Solutions • Parts, Service & Warranty • Construction Services
15600 37th Ave N • Suite 100 • Plymouth, Minnesota 55446 • 888-227-1629 • www.everidge.com • info@everidge.com

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PREDADOOR® NXT®

America's Leading High-Speed Door Taken to the Next Level

Rytec's PredaDoor® NXT® is the top-selling high-performance door with next-generation features. It is the most advanced direct drive roll-up door available for multi-industry, day in, day out use.

Contoured side columns offer a tight perimeter seal, with advanced wireless safety system and durable components to provide unsurpassed performance and reliability. The NXT Quick-Set™ repair system and System 4® door controller minimize door downtime. The PredaDoor NXT is ideal for interior and exterior applications where speed, low maintenance and dependability are critical.

PredaDoor NXT high performance is guaranteed with a **5-year limited warranty.**





High Speed

- Opening speed of up to 50 inches per second improves traffic flow, productivity and energy conservation

Safety is Standard

- Pathwatch® Safety Light System, dual photo eyes and bottom bar reversing edge provide enhanced safety

Durable Panel

- Integral wind ribs
- Full width, replaceable vision panel
- 2-ply or 3-ply Rylon® or USDA-compliant panel material options

Smooth Operation

- Advanced System 4® door controller enables precise door positioning, speed adjustment and control of all door functions

Full-Perimeter Seals

- Two brush seals in each side column
- Brush seal at top of the door
- Vinyl loop along floor

PredaDoor® NXT®

High Performance Roll-Up Door

Automotive Dealership | Cold Storage | Food and Beverage
Mfg/Dist/ Warehousing | Parking | Transit

Size/Dimensions

- Up to 16'W x 16'H
- 20" headroom above lintel
- 17" head projection
- 4" side column projection
- 8" side clearance, non-drive
- 16" side clearance, motor side
- Left or right hand motor placement

Travel Speed

- Opening speed up to 50 inches per second

Operation

- Variable speed AC drive provides soft acceleration and deceleration
- Independent opening and closing speeds for flexibility



Direct drive motor

Ry-Wi® Wireless System

- Continuous and uninterrupted signal eliminates need for coil cords
- Self-contained system with directional transmitters and receivers operate independently on each door



Automatic sleep mode extends battery life

Perimeter Seals

- Full-height brush seals on both side columns
- Edge-to-edge brush seal at top of door
- Vinyl loop forms tight seal along floor

Electrical Controls

- System 4® controller housed in a NEMA 4X rated enclosure with factory set parameters
- Intelligent processor monitors and controls power consumption during operation
- Advanced self-diagnostics for troubleshooting



System 4 shown with optional rotary disconnect

Standard maximum sizes shown; larger sizes may be available upon request.

Panel Design

- 71oz, 2-ply Rylon® panel material
- 2 Aluminum wind ribs
- Full-width replaceable vision panel
- Vertically flexible, but laterally stiff material helps door panel remain within the guides even if there is wind or pressure
- Puncture-resistant, polymer-impregnated monofilament polyester fabric

Break-Away™ Bottom Bar

- Quick-Set™ Break-Away™ tabs allow the wireless bottom bar to release in either direction without damaging the door
- Cutoff switches automatically shut off motor if bottom bar is impacted
- Auto reset with a push of a button after bottom bar is aligned



Quick-Set tabs for damage free release

Safety is Standard

- Pathwatch® Safety Light System
- Dual thru-beam photo eyes
- Sensitivity-adjustable pneumatic reversing edge
- Ry-Wi® Wireless System

Warranty

- Five-year limited warranty on motor/mechanical components and 2-ply Rylon panel material
- Two-year limited warranty on electrical components

Options

- 3-ply Rylon, USDA-compliant, tear-resistant vinyl or screen door panel - multiple color options
- Hood and motor cover
- Fiberglass wind ribs
- Vinyl weatherseals
- Stainless steel columns, bottom bar, hood or motor covers
- Car wash configuration - consult factory for details

American Owned, American Made

Watch All Rytec Testimonials

Specifications subject to change

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RytecDoors.com
888-GO-RYTEC
info@rytecdoors.com
P: 262.677.9046 F: 262.677.2058
One Cedar Parkway, PO Box 403
Jackson, WI 53037-0403

RYTEC HIGH PERFORMANCE DOORS

Item # _____

Job _____

SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
WIRE SHELVING

Super Adjustable™ Super Erecta Wire Shelving is the most advanced and innovative wire storage system available.

- **Maximum Space Utilization:** The Corner Release System encourages repositioning of shelves during initial assembly to reclaim wasted vertical space. In some cases, reclaimed vertical space will allow an extra shelving tier to be added to the storage unit resulting in a 25% increase in storage capacity!
- **Easily Assembled:** The unique Corner Release System enables quick and easy repositioning of shelves during the initial set up to accommodate different package or container sizes. "Total Assembly" is complete only after the shelves are properly spaced to maximize storage. SiteSelect™ Posts, with the double-groove visual guide feature, have circular grooves at 1" (25mm) increments and are numbered at 2" (51mm) intervals to easily identify proper shelf locations.
- **Easily Adjustable:** The unique shelf design and SiteSelect™ Posts enable "tool-free", quick adjustment at 1" (25mm) increments along the entire height of the post.
- **Improved Rigidity:** An enhanced Corner Release System has made Super Adjustable™ the most rigid, easily adjustable shelving system ever.
- **Strong:** Super Adjustable™ shelves hold as much weight as traditional Super Erecta wire shelving. Stationary units hold a maximum of 2,000 lb. (910kg). Maximum weight capacity per shelf (48" [1219mm] or shorter = 800 lb. [364kg]; longer than 48" [1219mm] = 600 lb. [273kg])
- **Choice of Finishes:** Super Adjustable™ Super Erecta shelving is available in a variety of finishes: chrome-plated for dry storage; Metroseal 3™ with antimicrobial product protection and Type 304 stainless steel for corrosive environments.
- **Accessories:** Compatible with the entire system of Super Erecta shelves and accessories. See Catalog Sheets 10.04, 10.05, 10.06 for more information.



Dry Storage — Chrome

NSF



Corner Release System

Super Adjustable™ Advantage . . .



Easy "no tool" shelf adjustment

1" 25mm spacing minimizes dead space

Efficient use of space allows more storage levels to be added.

Storage efficiency can increase by 25% or more!



*MICROBAN® and the MICROBAN® symbol are registered trademarks of the Microban Products Company, Huntersville, NC.

InterMetro Industries Corporation
North Washington Street
Wilkes-Barre, PA 18705
www.metro.com

10.01A

Job _____

SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
WIRE SHELVING

Dimensions

Super Adjustable™ Super Erecta Wire Shelving

Model No. Chrome	Model No. Metroseal 3	Model No. Stainless	Shelf Width/Length (in.)	(mm)	Approx. Pkd. Wt. (lbs.)	(kg)
A1424NC	A1424NK3	A1424NS	14x24	355x610	6	2.7
A1430NC	A1430NK3	A1430NS	14x30	355x760	7	3.2
A1436NC	A1436NK3	A1436NS	14x36	355x914	8	3.6
A1442NC	A1442NK3	A1442NS	14x42	355x1066	9 1/2	4.3
A1448NC	A1448NK3	A1448NS	14x48	355x1219	10 1/2	4.7
A1460NC	A1460NK3	A1460NS	14x60	355x1524	14	6.3
A1472NC	A1472NK3	A1472NS	14x72	355x1829	17	7.7
A1824NC	A1824NK3	A1824NS	18x24	457x610	7	3.2
A1830NC	A1830NK3	A1830NS	18x30	457x760	8	3.6
A1836NC	A1836NK3	A1836NS	18x36	457x914	9 1/2	4.3
A1842NC	A1842NK3	A1842NS	18x42	457x1066	11	5.0
A1848NC	A1848NK3	A1848NS	18x48	457x1219	12	5.4
A1854NC	A1854NK3	A1854NS	18x54	457x1370	14 1/2	6.6
A1860NC	A1860NK3	A1860NS	18x60	457x1524	17	7.7
A1872NC	A1872NK3	A1872NS	18x72	457x1829	20	9.1
A2124NC	A2124NK3	A2124NS	21x24	530x610	8	3.6
A2130NC	A2130NK3	A2130NS	21x30	530x760	9	4.1
A2136NC	A2136NK3	A2136NS	21x36	530x914	11	5.0
A2142NC	A2142NK3	A2142NS	21x42	530x1066	12	5.4
A2148NC	A2148NK3	A2148NS	21x48	530x1219	14	6.4
A2154NC	A2154NK3	A2154NS	21x54	530x1370	16	7.3
A2160NC	A2160NK3	A2160NS	21x60	530x1524	18	8.2
A2172NC	A2172NK3	A2172NS	21x72	530x1829	24	10.9
A2424NC	A2424NK3	A2424NS	24x24	610x610	9	4.1
A2430NC	A2430NK3	A2430NS	24x30	610x760	11	5.0
A2436NC	A2436NK3	A2436NS	24x36	610x914	13	5.9
A2442NC	A2442NK3	A2442NS	24x42	610x1066	15	6.8
A2448NC	A2448NK3	A2448NS	24x48	610x1219	16	7.3
A2454NC	A2454NK3	A2454NS	24x54	610x1370	18	8.6
A2460NC	A2460NK3	A2460NS	24x60	610x1524	21	9.5
A2472NC	A2472NK3	A2472NS	24x72	610x1829	26	11.8
A3036NC			30x36	760x914	15	6.8
A3048NC			30x48	760x1219	21	9.5
A3060NC			30x60	760x1524	26 1/2	11.8
A3072NC			30x72	760x1829	31	14.0
A3636NC			36x36	914x914	18	8.2
A3648NC			36x48	914x1219	23	10.4
A3660NC			36x60	914x1524	29	13.1
A3672NC			36x72	914x1829	34 1/2	15.4

NOTE: MICROBAN® protects the Metroseal 3 coating from bacteria, mold, mildew and fungi that cause odors, stains and product degradation. For Metroseal 3 shelving information see sheet #10.10A.

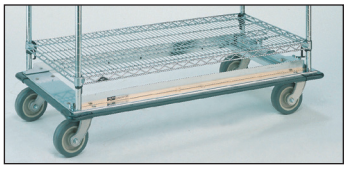


All Environments — Metroseal 3™ with *Microban® Antimicrobial Product Protection

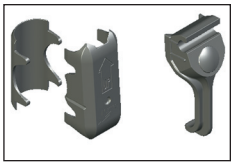
Mobile Options



Stem Casters



Dolly Trucks



Replacement Parts
Each kit includes components for one original Super Adjustable or Super Adjustable shelf; (4) wedges, (4) sleeves, (4) shelf releases.
Model No. SAKITA2

SiteSelect™ Posts

STATIONARY Actual Height* (in.)	(mm)	Model No. Plated	Model No. Metroseal 3	Model No. Stainless	MOBILE Actual Height* (in.)	(mm)	Model No. Plated	Model No. Metroseal 3	Model No. Stainless	Approx. Pkd. Wt. (lbs.)	(kg)
7 3/8	187	7P	7PK3	7PS	6 3/4	171	7UP	7UPK3	7UPS	1/2	0.3
14 3/8	365	13P	13PK3	13PS	13 3/4	349	13UP	13UPK3	13UPS	1	0.5
28 3/8	720	27P	27PK3	27PS	27 3/4	704	27UP	27UPK3	27UPS	1 3/4	0.75
34 3/8	873	33P	33PK3	33PS	33 3/4	857	33UP	33UPK3	33UPS	2	0.9
54 7/16	1382	54P	54PK3	54PS	53 13/16	1366	54UP	54UPK3	54UPS	3	1.4
62 7/16	1585	63P	63PK3	63PS	61 13/16	1570	63UP	63UPK3	63UPS	3 1/2	1.6
—	—	—	—	—	69 3/4	1771	70UP	—	—	3 3/4	1.7
74 1/2	1892	74P	74PK3	74PS	73 7/8	1876	74UP	74UPK3	74UPS	4	1.8
86 1/2	2197	86P	86PK3	86PS	85 7/8	2181	86UP	86UPK3	86UPS	4 1/2	2.0
96 1/2	2450	**96P	96PK3	96PS						5 1/2	2.5

*Actual height for the stationary post includes the post cap and the leveling bolt completely tightened.

Important: When ordering by components remember that for maximum stability, units should be kept as wide and low as possible.

All Metro Catalog Sheets are available on our Web Site: **www.metro.com**

InterMetro Industries Corporation
North Washington Street, Wilkes-Barre, PA 18705
Phone: 570-825-2741 • Fax: 570-825-2852

For Product Information:
U.S. and Canada: 1-800-992-1776
Outside U.S. and Canada: www.metro.com/contactus

L02-006A
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Information and specifications are subject to change without notice. Please confirm at time of order.

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SUPER ADJUSTABLE™ SUPER ERECTA SHELF®
Adjustable Wire Shelving

Vanguard™
Steel Lockers

At a Glance

- Knock Down Construction
- Standard louvers for ventilation
- Classic III handle standard on QuickShip multi-point latch models
- 24 ga. body painted to match the door frame
- Many sizes available through QuickShip

Ventilation Options


Standard Louvers (S)

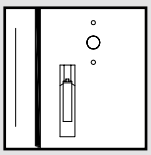

Full Louvers (O)

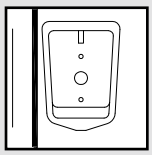

Mini Louvers (O)

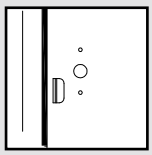

Solid Door (O)


Visual Perf (O)

Door Handle Options


Die-Cast (S)


Classic III Recessed (O)


Friction Catch (SB)

S = Standard
O = Optional
SB = Standard on Box Lockers

For Vanguard specifications, see page 36.



Penco has been manufacturing lockers for decades that last for decades, and the Vanguard line is the embodiment of what it takes to withstand the daily use and abuse typically dealt to a locker.

The powder coat baked enamel finish is available in many standard colors, with body parts finished the same color as the doors, as standard.

For quieter operation, each latch hook features a noise reducing rubber bumper.

The welded door frames have mortise and tenon construction and are spot welded for lifetime rigidity. Every door has a continuous door strike. All hinges are full loop, 5-knuckle design.


1 Tier **2 Tier** **3 Tier** **4 Tier** **5 Tier** **6 Tier** **2 Person** **Duplex**


Available in 24 Colors
See Page 46

Vanguard™
Sizes and Dimensions

Vanguard 1, 2 & 3 Tier Lockers

		1 Tier				2 Tier						3 Tier			
Overall Height*		60”	72”	60”	72”	60”	72”	84”	60”	72”	84”	60”	72”	60”	72”
Opening Height*		60”	72”	60”	72”	30”	36”	42”	30”	36”	42”	20”	24”	20”	24”
Width	Depth	Die-Cast Handle		Classic III Handle		Die-Cast Handle			Classic III Handle			Die-Cast Handle		Classic III Handle	
9”	12”	6101V	6151V	6101R	6151R	6201V	6221V	-	6201R	6221R	-	-	-	6401R	6413R
	15”	6103V	6153V	6103R	6153R	6203V	6223V	-	6203R	6223R	-	-	-	6403R	6415R
	18”	6105V	6155V	6105R	6155R	6205V	6225V	-	6025R	6225R	-	-	-	6405R	6417R
12”	12”	6111V	6161V	6111R	6161R	6211V	6231V	6251V	6211R	6231R	6251R	6407V	6419V	6407R	6419R
	15”	6113V	6163V	6113R	6163R	6213V	6233V	6253V	6213R	6233R	6253R	6409V	6421V	6409R	6421R
	18”	6115V	6165V	6115R	6165R	6215V	6235V	6255V	6215R	6235R	6255R	6411V	6423V	6411R	6423R
	21”	6117V	6167V	6117R	6167R	6217V	6218V	-	6217R	6218R	-	6449V	-	6449R	6499R
	24”	6118V	6168V	6118R	6168R	6200V	6220V	-	6200R	6220R	-	-	-	-	-
15”	12”	6119V	6179V	6119R	6169R	6227V	6239V	-	6227R	6239R	-	-	6472V	-	6472R
	15”	6121V	6171V	6121R	6171R	6229V	6241V	6261V	6229R	6241R	6261R	-	6494V	-	6494R
	18”	6123V	6173V	6123R	6173R	6237V	6243V	6263V	6237R	6243R	6263R	-	6496V	-	6496R
	21”	6125V	6175V	6125R	6175R	6257V	6245V	-	6257R	6245R	-	-	-	-	-
	24”	6126V	6177V	6126R	6177R	6258V	6246V	-	-	6246R	-	-	-	-	-
18”	15”	6134V	6180V	6134R	6180R	-	6259V	-	-	6259R	-	-	-	-	-
	18”	6131V	6181V	6131R	6181R	-	6247V	-	-	6247R	-	-	-	-	-
	21”	6133V	6183V	6133R	6183R	-	6249V	-	-	6249R	-	-	-	-	-
	24”	6135V	6185V	6135R	6185R	-	6250V	-	-	6250R	-	-	-	-	-
24”	18”	6149V	6196V	6149R	6196R	-	-	-	-	-	-	-	-	-	-
	21”	6158V	6198V	6158R	6198R	-	-	-	-	-	-	-	-	-	-
	24”	6160V	6199V	6160R	6199R	-	6274V	-	-	6274R	-	-	-	-	-

Vanguard 2 Person and Duplex Lockers

		2 Person				Duplex			
Overall Height*		60”	72”	60”	72”	60”	72”	60”	72”
Unit Width	Unit Depth	Die-Cast Handle		Classic III Handle		Die-Cast Handle		Classic III Handle	
15”	12”	6510V	6500V	6510R	6500R	-	-	-	-
	15”	6506V	6501V	6506R	6501R	6519V	6531V	6519R	6531R
	18”	6437V	6503V	6437R	6503R	6521V	6533V	6521R	6533R
	21”	-	6505V	-	6505R	-	6535V	-	6535R
18”	15”	-	6509V	-	6509R	-	-	-	-
	18”	-	6515V	-	6515R	-	-	-	-
	21”	-	6525V	-	6525R	-	-	-	-

* All dimensions are in inches. Overall Height is the overall height of the locker frame, NOT including legs. Opening Height is the nominal height of the individual door opening.

Opening Height for 2 Person Lockers: for 60” high models, bottom doors are nominal 42” high; for 72” high models, bottom doors are nominal 54” high. Book compartment doors are nominal 9” high each.

Vanguard Box Lockers - 3, 4, 5 & 6 Tier

		3 Tier		4 Tier		5 Tier		6 Tier
Overall Ht.*		60”	72”	60”	72”	60”	72”	72”
Opening Ht.*		20”	24”	15”	18”	12”	14-2/5”	12”
Unit Width	Unit Depth	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
9”	12”	6301V	6313V	-	-	-	-	-
	15”	6303V	6315V	-	-	-	-	-
	18”	6305V	6317V	-	-	-	-	-
12”	12”	6307V	6319V	6325V	6331V	6343V	6353V	6365V
	15”	6309V	6321V	6327V	6337V	6345V	6355V	6367V
	18”	6311V	6323V	6329V	6339V	6347V	6357V	6369V
	21”	6349V	6399V	6393V	6395V	-	6435V	6371V
15”	12”	-	6372V	-	-	-	-	6363V
	15”	-	6394V	6333V	6431V	6351V	6359V	6373V
	18”	-	6396V	-	6433V	6397V	6361V	6375V
	21”	-	-	-	-	-	-	6377V
18”	18”	-	6335V	-	-	-	-	6379V
	21”	-	-	-	-	-	-	6378V

Vanguard™
Specialty Lockers

Dual Lockers

A dual locker is a single tier locker with a vertical partition separating the area beneath the shelf into two compartments. It is ideally suited for situations where street clothes and work clothes are to be kept apart. It is generally used with lockers 15” or 18” wide and 18” or 21” deep. Guardian and Invincible II lockers can also be supplied as dual lockers.



Box Over Lockers



Provides a compact independent lockable door above a 60” high standard Vanguard Door. If a shelf is required in the lower compartment, it must be ordered separately.

Box Over Lockers - 72” High		
Unit Width	Unit Depth	Cat. No.
12”	12”	6439V
12”	15”	6441V
12”	18”	6443V
15”	15”	6436V
18”	18”	6445V
18”	21”	6447V

16 Person Locker

Accommodates 16 users in only 69” of floor space. Includes a 45” wide coat rod. Ideal for employee lockers. Accepts built-in locks or padlocks.



69”W x 18” D x 72”H. Cat. No. 6579V

Wall Mounted Locker with Coat Rod



A practical storage unit where space is at a premium. Four private compartments with a hanging area for 16 coats. When wall mounted, the floor below is kept clear for easy cleaning (wall anchors are not included). Can also be set on counters or cabinets (without coat rod).
45”W x 18”D x 13-5/8” H.
Cat. No. 68242

The Executive



The Executive is a custom-outfitted 24” wide double door locker which offers such optional personal amenities as multiple storage shelves, lockable inner storage compartment, and combination comb & brush tray with towel bar. Shown here with available Classic III stainless steel recessed handle and optional front and end bases.

It is especially appropriate for golf clubs. Other accessories available include golf ball tray, acrylic mirror and name card holder. For ordering information contact your Penco representative.

Half Height Locker, 1 Tier



Available in 30-1/2”, 36-1/2” and 48-1/2” heights; Available in 12”, 15” and 18” depths; 12” wide. Only 48-1/2” high lockers include a shelf for storage of books and small articles.

One High Box Locker



This 12” wide individual one high box locker provides storage for personal items and features standard box locker construction with friction catch door pull. Actual overall height is 13-5/8”.

7 and 8 Person Lockers





These efficient lockers are ideal for multiple user situations such as school gymnasium locker rooms. The box compartments (18”W x 12”H) are for permanent storage of athletic gear. When a user is present, the large locker (18”W x 60”H) is used for street clothes.

7 Person Locker			
Unit Width	Unit Depth	Unit Height	Cat. No.
36”	18”	72”	6573V
36”	21”	72”	6575V

8 Person Locker			
Unit Width	Unit Depth	Unit Height	Cat. No.
54”	18”	72”	6577V

ADA / Environmental

Americans with Disabilities Act Information (ADA)



Penco lockers commonly accepted for ADA or barrier-free assignments are single tier and double-tier (lower tier only) when equipped with the Classic III recessed handle with multi-point latching: Vanguard, Guardian, Invincible II, All-Welded and Angle Iron (with available modifications). Also, consider the SmartLocker® electronic system which features touchless entry. Other handle types and certain lock selections may not be recognized as ADA compliant without modification.

Single tier 60" or 72" high lockers with the Classic III recessed multi-point latch handles must have shelves relocated and/or added to accommodate ADAAG mandated reach ranges. Two tier 36" high openings with the Classic III recessed handle may be used by designating the lower tier for ADA compliance. An extra shelf should be ordered to bring the lowest reach point within the prescribed ADAAG range based upon side or forward reach. We recommend field drilling for these shelf locations on smaller requirements. The owner or architect may also require a handicapped access sign be placed on the door.

Other handles and configurations may sometimes be specified, but those above are the most appropriate based upon a literal interpretation. Attention should also be paid to the clear area in front of the lockers to meet other separate but related guidelines. Contact your factory representative for assistance, or go to www.access-board.gov/adaag/html/adaag.htm for a complete text of the ADA Accessibility guidelines.

Environmental Information



- Based upon the most recent information from our source mills, the recycled content of our steel lockers can range from 25% to over 50%. Because the percentage of recycled content may vary from project to project based on a number of variables, please contact our offices for detailed information on your specific requirement.

- Powder coating drastically reduces waste through high efficiency application & recovery methods.

- Penco's powder coat paint contains no solvents and as a result releases no Volatile Organic Compounds (VOC's) normally associated with wet paint processes.

- Our packaging contain at least 20% post-consumer recycled content.

- Approximately 34% of the U.S. population lives within a 500 mile radius of our manufacturing facility, requiring less fuel to ship our products to many destinations.



Made in USA

Penco Products, Inc. continues to manufacture every locker featured in this catalog in the United States. We believe that by capitalizing on the efficiency of our North Carolina plant as well as our experienced workforce and formidable buying power, we can remain the industry leader from right here at home.

With 475,000 square feet of manufacturing space and over 150,000 square feet at multiple QuickShip distribution centers throughout the United States, Penco is also able to deliver the industry's shortest lead times while reducing shipping time and mileage. This is the result of one company's ongoing commitment to delivering America's best storage solutions to both domestic and global marketplaces.

MADE IN U. S. A.

MODEL 6231R ITEM #

Steel Lockers
Accessories

Locking System Options

Built-in Key Locks. Available in flat key or grooved key models. Dead bolt and spring bolt construction. Reversible for LH & RH applications.



Built-in Combination Locks. Available with five combination changes for security year to year. Master key controlled. Stainless steel escutcheon plate. Use dead bolt models for all but box lockers, which use spring bolt. Available in LH & RH.



Combination Padlocks. Available with and without master keying. 3 number dialing. Rust resistant. Fits box lockers, Die-Cast Handles, recessed handles, cremone handles and basket racks.



Note: For proper fit and security, padlock shackle must have a diameter of 9/32" or 5/16" and a distance of .75" to .81" between the top of the case and the underside of the shackle when in the locked position.

Coin Operated. Ideal for public or private applications that require security with the assurance that keys will be returned, or as a revenue producer. Fits most Penco lockers. Available in 3 types: coin return, coin collect and token operation. Not available for Defiant lockers.



ADA Compliant Locks

Key Lock Model No. 9707. Just insert key (turning not required) and lift latch pull to open door.



Key Lock Model No. 9676A. Has an oversized keyhead to facilitate turning.

Battery Powered Lock. ADA compliant lock that opens by touching a Button Key to the lock. When opened, an LED light flashes and audio indicator sounds. Lock uses programming key to set user access and a master key for administrative or management use.



Benches and Pedestals

A natural accessory for any locker room. Benches add permanent comfort and order to the floor plan arrangement.

Penco offers a choice of bench pedestal styles. Order two pedestals for standard benches 96" long or less; order three pedestals for benches over 96" long. The seat portion of ADA benches require a minimum of 4 pedestals, placed as shown in the photo of the Bench Bracket.

Bench Tops

Exceptionally strong. Made from selected hardwood and finished with clear lacquer.

For ADA (Americans With Disabilities Act) compliant benches, use 16" or 18" deep bench backs and 20" or 24" deep seats plus Bench Brackets to support the backs. Order Pedestals separately.

Bench Tops			
Unit Width	Unit Depth	Unit Thickness	Cat. No.
Standard Bench Tops			
36"	9-1/2"	1-1/4"	9611
48"	9-1/2"	1-1/4"	9600
48"	12"	1-1/4"	9622
60"	9-1/2"	1-1/4"	9601
72"	9-1/2"	1-1/4"	9602
84"	9-1/2"	1-1/4"	9603
96"	9-1/2"	1-1/4"	9604
108"	9-1/2"	1-1/4"	9605
120"	9-1/2"	1-1/4"	9606
132"	9-1/2"	1-1/4"	9607
144"	9-1/2"	1-1/4"	9608
ADA Compliant Benches			
42"	16"	1-1/4"	9634
48"	16"	1-1/4"	9635
42"	18"	1-1/4"	9625
48"	18"	1-1/4"	9628
42"	20"	1-1/4"	9636
48"	20"	1-1/4"	9632
42"	24"	1-1/4"	9624
48"	24"	1-1/4"	9623

A. Heavy Duty Bench Pedestal

16-1/4" high pedestal consists of a heavy duty steel tube welded to top and bottom flanges. Hardware for fastening to the bench only is included. Pedestal must be anchored to the floor. Order two or more per standard bench; four or more for ADA compliant bench. Available for quick shipment in 028 Gray and 073 Champagne. Available on production schedules in all standard colors. Cat. No. 60822H

B. Stainless Steel Free Standing Pedestal

This pedestal has a 14" wide base which allows for moveable free standing use. Holes in the bottom are provided for optional floor anchoring or for attachment of non-skid bumpers (see below). Hardware is supplied for fastening to the bench top. Height is 16-1/4". Cat. No. 60827H

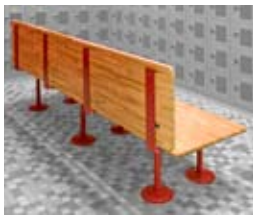


Non-Skid Pedestal Kit for Stainless Steel Pedestal

Rubber non-skid bumpers to prevent damage to floors. Consists of set of 4 non marking rubber feet and fastening hardware. Order 1 kit per pedestal. Cat. No. 68420

Bench Bracket for Back of ADA Benches

For attaching 16" or 18" backrest to 20" or 24" deep benches for ADA use. Sturdy steel construction. Order a minimum of 2 per back. Size is 19" x 19" x 2". Hardware included. Cat. No. 6ACXHP61H



Mirror

Made of acrylic plastic that will not break in normal usage. Mirror has an adhesive backing for easy installation. Size is 6" wide x 8" high. Cat. No. 96370



Specifications
Vanguard™ Lockers (KD)

Materials
Sheet Steel: All parts made from prime grade mild cold rolled sheet stell from surface imperfection, and capable of taking a high grade enamel finish.
Hinges: .074" thick, 2" high, double spun, full loop, tight pin, five-knuckle butt hinges, projection welded to door frame and securely fastened to the door with 2 steel rivets. Doors over 48" high shall have three hinges, all other doors shall have two hinges.
Finishing: Chemically pretreat metal with a multiple stage cleaning and metal preparation process. Finish coat shall be electrostatically applied powder coat enamel properly cured to paint manufacturer specifications to achieve optimum performance. All lockers shall be painted inside and outside with the same color.
Equipment: Coat hooks and coat rods are zinc plated. Truss fin head bolts and hex nuts are zinc plated.

Fabrication General
Construction: Built on the unit principle - each locker shall have an individual door and frame, individual top, bottom, back and shelves with common intermediate uprights separating compartments. Lockers shall be fabricated square, rigid and without warp. Doors shall be flat and free of distortion.
Door Frame: All door frame members to be not less than 16 gauge formed to a channel shape. Vertical members to have an additional flange to provide a continuous door strike. Intermembering parts to be mortised and tenoned and electrically welded together in a rigid assembly capable of resisting strains.
Cross frame members of 16 gauge channel shapes including intermediate cross frame on double and triple tier lockers shall be securely welded to vertical framing members to ensure rigidity.
Body: Bolt spacing in locker body construction not to exceed 9" o.c. All locker body components shall be made of cold rolled steel specially formed for added strength and rigidity and to ensure tight joints at fastening points. Tops & bottoms shall be 24 gauge with three sides formed 90° and the front offset formed to be flush with the horizontal frame member. Shelves shall be 24 gauge with four sides formed to 90°, the front edge shall have a second bend. Backs & sides shall be 24 gauge.

Doors: Doors 30" or higher shall be formed from one piece 16 gauge cold rolled sheet steel. Doors less than 12" wide shall be minimum of 18 gauge. Formations shall consist of a full channel shape on the lock side of adequate depth to fully conceal the lock bar, channel formation on the hinge side, and right angle formations across the top and bottom. Doors over 15" wide x 60" & 72" high shall have a 3" wide 20 gauge full height reinforcing pan welded to the inside face of the door on 6" centers.
Doors for box lockers 3, 4, 5, and 6 tier high shall have channel formations on lock and hinge side and have right angle flanges on the top and bottom. Doors less than 15" wide shall be 18 gauge, 15" wide or wider shall be 16 gauge. Box locker door for 3, 4, 5, and 6 openings high shall be pre-punched for padlock latch and friction catch and built-in combination and key locks.
Door Handle 1 & 2 Tier, 2 Person & Duplex: Handle to consist of zinc alloy die-cast case and handle. 40,000 PSI maximum tensile strength, chrome plated. Handle to be pulled out to move up latch bar and open door in one motion. Padlock eye for use with 9/32" diameter padlock shackle to be an integral part of handle and to be so located that extension of handle forms a padlock strike. Attachment to latch bar shall be tamper-proof and concealed inside the door. The case shall be kick proof type, shielding the movable part and provide a padlock strike to prevent scratching and marring the door. A lock hole cover plate shall be provided for use with padlocks.
Door Latching 1 & 2 Tier, 2 Person & Duplex: Doors to have latch clip engaging the door frame at three points on doors over 42" high and two points on all other doors. Locking device to be positive, automatic type, whereby locker door may be locked when open, then closed without unlocking. One rubber silencer shall be firmly secured in the frame at each heavy gauge latch hook. Latch clips shall be glass filled nylon for long life and low friction and shall hold doors shut by engaging the latch hooks.
Door Handle & Latching 3 to 6 Tier Box Lockers: Doors shall be punched for use with padlocks or built-in locks. Doors for use with padlocks shall be equipped with an 18 gauge combination door pull, staple and lock hole cover plate with integral friction catch.
Ventilation: Lockers with doors 36" to 72" high shall have two sets of louvers, one set near the top of the door and another set near the bottom of the door. Lockers with doors 30" or less in height, shall have a minimum of one set of louvers.
Number Plates: Each locker to be supplied with a polished aluminum number plate, 2-1/4" wide x 1" high, with black numerals not less than 3/8" high. Number plates shall be attached to the face of the door with two aluminum rivets.
Interior Equipment: Single-tier lockers 48-1/2" or higher shall have a hat shelf located approximately 9" below the top of locker; if less than 18" deep, locker shall have three single prong hooks and one double-prong ceiling hook on 9" and 12" wide lockers. Four single prong hooks are supplied on wider models. Single tier lockers 18" or more in depth shall have a coat rod instead of a ceiling hook. 30" & 36" high lockers shall have three single-prong wall hooks and one double-prong ceiling hook through 12" wide and four wall hooks for 15" or wider. 24" wide will have two double prong ceiling hooks. 20" & 24" high openings to have three wall hooks through 12" wide, and four wall hooks for 15" wide and wider. Hooks to be attached with two bolts per hook.

Locker Accessories
See locker Accessory Specifications.

Options
Body: Locker shall be assembled using rivets.
Recessed Handle 1, 2 & 3 Tier Latching: Delete the standard handle and provide handle recessed in the door with finger lift control. 20 gauge drawn pocket shall be brushed stainless steel securely fastened to the door with two tabs plus a positive tamper resistant decorative fastener. The pocket shall be of sufficient depth to prevent a combination padlock, built-in combination lock or key lock from protruding beyond the face of the door. A lock hole cover plate shall be provided for use with padlocks.
The lifting piece shall be 14 gauge formed steel, attached to the latching channel with one concealed retaining lug and one rivet assuring a positive two point connection. Handle finger lift shall have a padlock eye for use with a 9/32" diameter padlock shackle. It shall have a sound deadening molded comfortable finger lift. Note: adding a recessed handle changes the lower louver pattern.
Hush Tone Sound-Dampening Panels: Panels are designed to reduce sound levels when doors are slammed. They are 22 gauge and are die formed and have a full perimeter flange spot welded flush to the inside door surface. Louvers are not used when sound-dampening panels are provided.
Side and Back Ventilation: Sides and/or backs shall be perforated with 1/2" diameter holes in patterns of 42 holes per group.
Door Ventilation: Visual perforations shall consist of 5/8" wide x 1-1/8" high rectangular perforations in the door in standard manufacturer's patterns. Doors with visual perforations shall not have louvers.
Mini louvers shall be 5/8" wide x 1/4" high and be placed in doors in manufacturer's standard pattern. Doors with mini louvers shall not have standard louvers.
ADA Compliant Lockers: Handicap lockers shall have recessed handles and shall be single tier or the lower opening of a double tier locker. Locker bottom shall be a minimum of 15" off the floor, or an extra shelf placed 15" off the floor. Single tier lockers shall have a shelf 48" off the floor. Doors assigned for handicapped use shall have an appropriate symbol sign.

Execution:
Installation: Install metal lockers at location shown in accordance with manufacturers instructions for plumb, level, and flush installation.
Anchor Lockers to the floor and wall 36" on center or less as recommended by the manufacturer.
Install Sloping Hoods and Metal Fillers using concealed fasteners. Provide flush hairline joints against adjacent surfaces.
Install Benches by fastening bench tops to pedestals and securely anchoring to the floor using appropriate anchors for the floor material.
Adjust & Clean: Adjust doors and latches to operate without binding. Verify that latches are operating satisfactorily.
Touch Up marred finishes with factory supplied paint.

Penco Products, Inc. reserves the right to vary specifications consistent with a policy of continuous product improvement.

Highline® Comfort Height®

Two-piece elongated 1.28 gpf chair height toilet

K-3949-TR

WC-1

ADULT ADA



Features

- Two-piece design.
- Elongated bowl offers added room and comfort.
- Comfort Height® feature offers chair-height seating that makes sitting down and standing up easier for most adults.
- 1.28 gpf (4.8 lpf).
- Right-hand Polished Chrome trip lever.
- Tank cover locks included.
- Combination consists of the K-4841-TR tank and the K-4199 bowl.

Technology

- Single-flush gravity uses the force of gravity and a precision-engineered tank, bowl, and trapway to create a strong siphon during flushing.
- Class Five® flushing technology offers virtually plug-free performance and rinsing power for a clean bowl.

Installation

- Three-bolt quick-connect installation.
- Seat and supply line sold separately.

Water Conservation & Rebates

- Eligible for consumer rebates in some municipalities.

Recommended Products/Accessories

K-4636 Cachet® Quiet-Close™ Elongated Toilet Seat
K-5588 Purefresh® Elongated Toilet Seat
K-4108 C³®-230 Elongated bidet toilet seat
K-5420 Low-Profile Bolt Caps
K-9379 Trip Lever
1023457 Wax Ring/Hardware Kit
1265114 Connector Hose
K-23726 Drain treatment

Included Components

Product consists of:

K-4199 Two-piece elongated chair height toilet bowl
K-4841-TR Toilet tank with cover locks, 1.28 gpf

Additional Components:

Bolt cap accessory pack
Tank accessory pack
Tank cover
Trip lever

ADA | **CSA B651** | **OBC**

Codes/Standards

ASME A112.19.2/CSA B45.1
DOE - Energy Policy Act 1992
EPA WaterSense®
California Energy Commission (CEC)
ADA
ICC/ANSI A117.1
CSA B651
OBC

KOHLER® Toilets and Seats Limited Warranty

See website for detailed warranty information.

Available Colors/Finishes

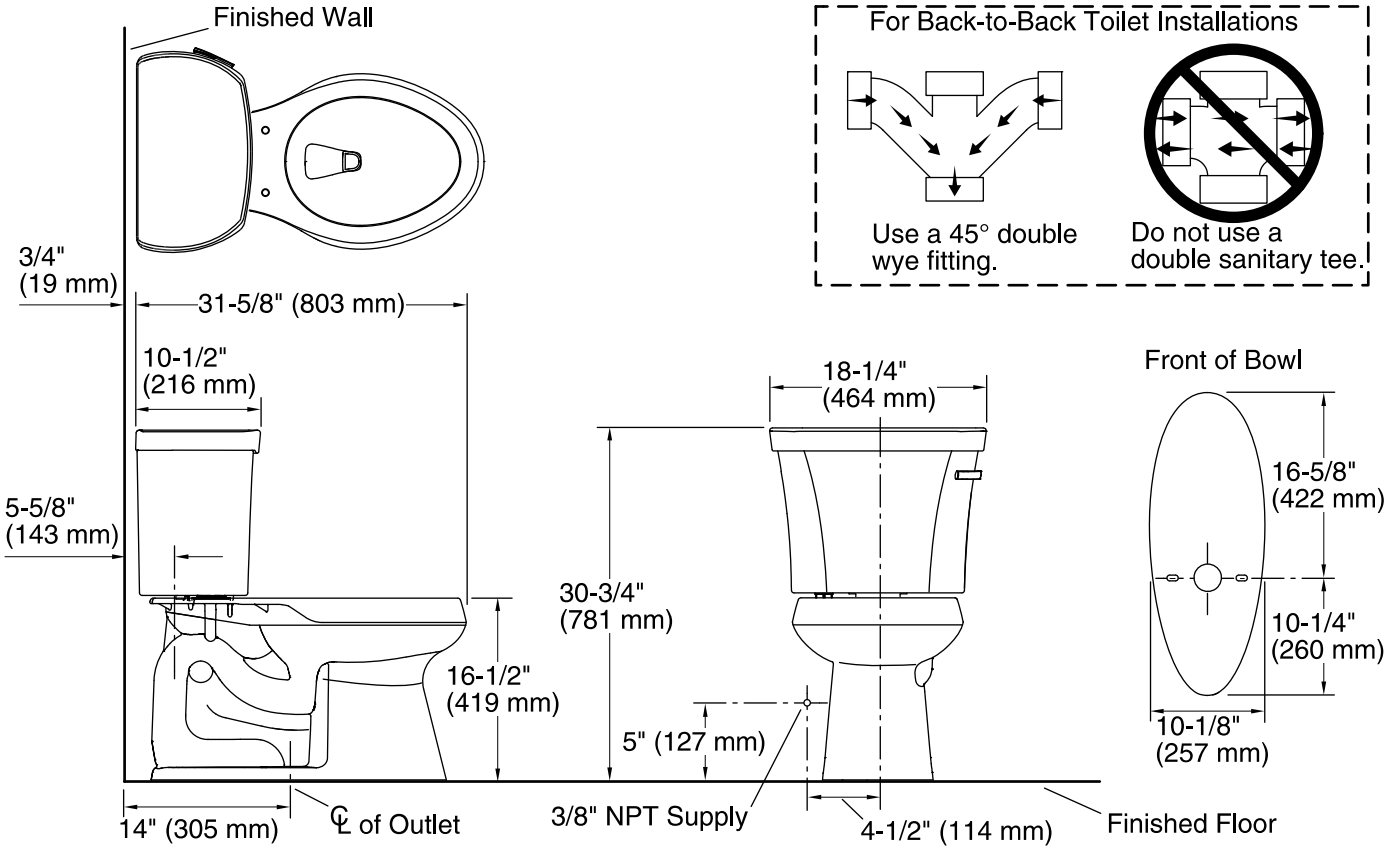
Color tiles intended for reference only.

Color	Code	Description
	0	White
	96	Biscuit

Highline® Comfort Height®

Two-piece elongated 1.28 gpf chair height toilet

K-3949-TR



Technical Information

All product dimensions are nominal.

Toilet type:	Two-piece, Floor-mount
Waste Outlet:	Floor
Bowl shape:	Elongated
Flush type:	Class Five®
Trap passageway:	2-1/8" (54 mm)
Water Consumption Full:	1.28 gpf (4.8 lpf)
Water surface size:	11-3/8" x 8" (289 mm x 203 mm)
Rim to water surface:	5-3/8" (137 mm)
Rough-in:	14" (356 mm)
Seat-mounting holes:	5-1/2" (140 mm)

Notes

Install this product according to the installation instructions.

For back-to-back toilet installations: Use only a 45° double wye fitting.

ADA, OBC, CSA B651 compliant when installed to the specific requirements of these regulations.

Plumbing codes may require elongated toilets and elongated, open-front seats in public bathrooms.

Accessibility standards may require controls to be located on the open side of the toilet.

Church COMMERCIAL

COMMERCIAL HEAVY-DUTY PLASTIC TOILET SEAT







PLASTIC HINGES WITH STAINLESS STEEL POSTS AND PINTLES



STA-TITE® COMMERCIAL FASTENING SYSTEM™

MODEL #	COLOR #
295CT/295SSCT	WC-1

DESCRIPTION:

Open front less cover, elongated, heavy-duty, injection molded solid plastic toilet seat. Features four molded-in bumpers, non self-sustaining (295CT) or self-sustaining (295SSCT) check hinges with non-corrosive 300 Series stainless steel posts and pintles and STA-TITE® Commercial Fastening System™. This seat complies with IAPMO/ANSI Z124.5-2013 Plastic Toilet Seats as a class Commercial Heavy Duty.

SPECIFICATIONS:

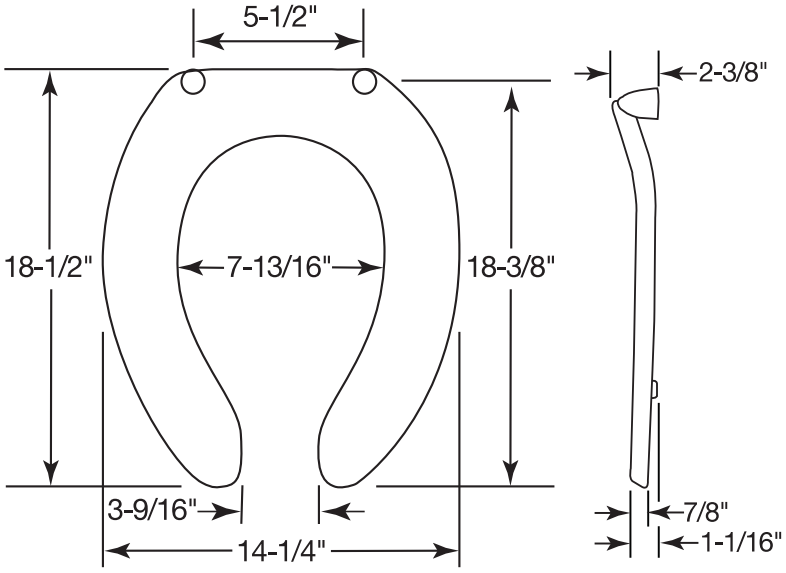
Size:	Elongated
Material:	Plastic
Style:	Open Front less Cover
Bumpers:	Four
Hinges:	Plastic Non Self-Sustaining (295CT) or Self-Sustaining (295SSCT) with 300 Series Stainless Steel Posts and Pintles
Fastening System:	STA-TITE® Commercial Fastening System™

FEATURES:

STA-TITE® Commercial Fastening System™

Non-Corrosive 300 Series Stainless Steel Posts and Pintles

DIMENSIONS:



Proudly Made in the USA

Church Seats, Sheboygan Falls, WI 53085
www.ToiletSeats.com

Phone: 800-233-7328 Fax: 800-292-3647

KOHLER®

Kingston™
Wall-Mount Bathroom Sink
K-2005

L-1
ADULT ADA



Features
- With hanger.
- With overflow.
- 4" (102 mm) centers.
- 21-1/4" (540 mm) x 18-1/8" (460 mm).

Material
- Vitreous china.

Installation
- Wall-mount

Recommended Accessories
K-8998 P-Trap

Components
Additional included component/s: Hanger.

ADA **CSA B651**

Codes/Standards
ASME A112.19.2/CSA B45.1
ADA
ICC/ANSI A117.1
CSA B651

KOHLER® One-Year Limited Warranty
See website for detailed warranty information.

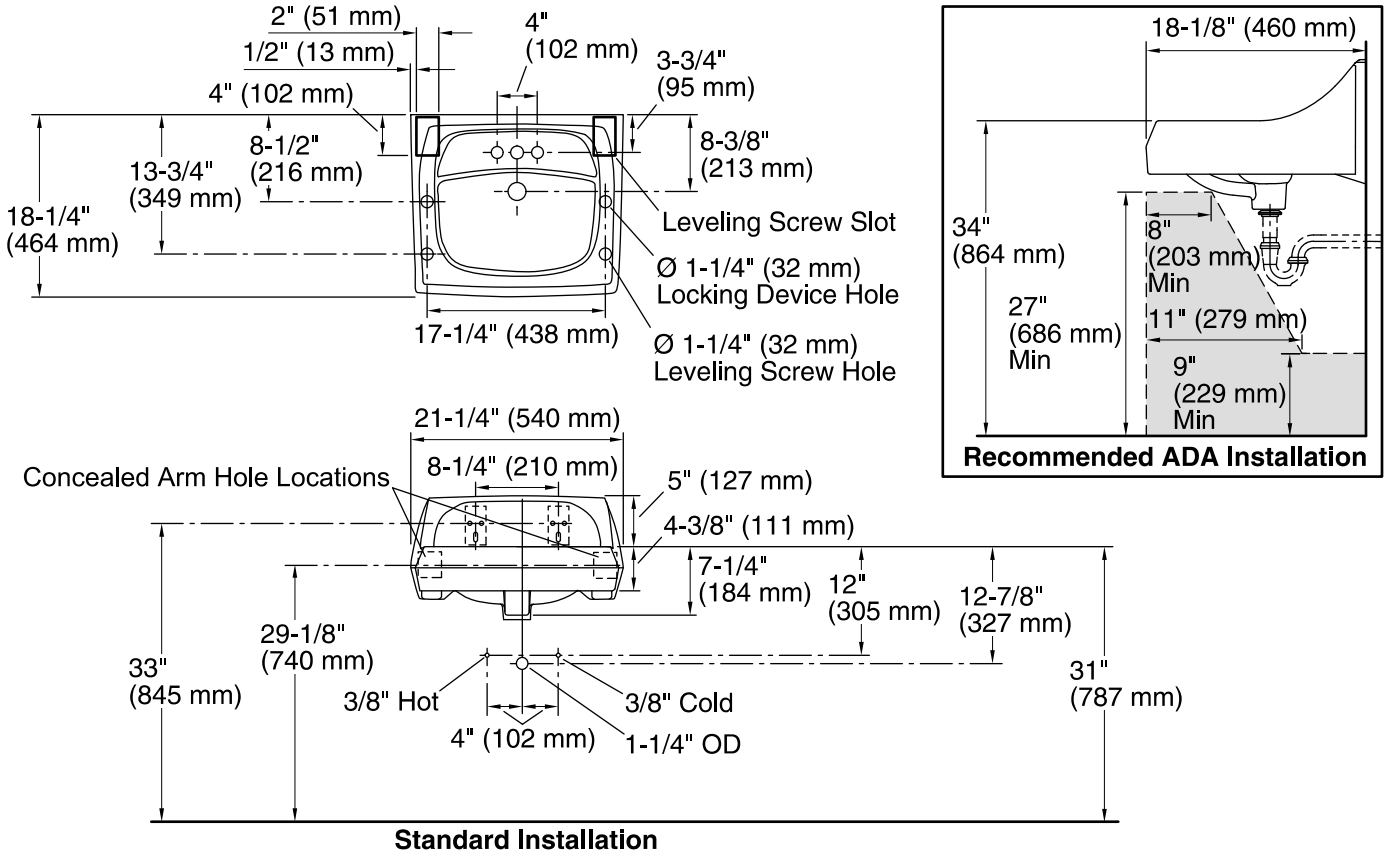
Available Color/Finishes
Color tiles intended for reference only.

Color	Code	Description
	0	White
	96	Biscuit
	47	Almond
	7	Black Black™

Kingston™

Wall-Mount Bathroom Sink

K-2005



Technical Information

All product dimensions are nominal.

Bowl configuration:	Single
Installation:	Wall-mount
Bowl area (Only):	Length: 16" (406 mm) Width: 10" (254 mm) With overflow: Yes Water depth: 3-1/8" (79 mm)
Number of deck holes:	3
Soap/Lotion hole:	1-1/4" (32 mm)
Drain hole:	1-3/4" (44 mm)

Notes

Install this product according to the installation instructions.

ADA, CSA B651 compliant when installed to the specific requirements of these regulations.

Metering Faucets
3600-E39VPAB

CHICAGO FAUCETS
Geberit Group

Product Type

Deck-mounted metering sink faucet with 4" centers

Features & Specifications

- 4" fixed centers
- Vandal Proof Pressure compensating Econo-Flo non-aerating outlet 0.35 GPM
- Vandal Proof 2-3/8" single-wing canopy handle
- Actuator assembly for 3600 Series
- ECAST® design provides durable cast brass construction with total lead content equal to or less than 0.25% by weighted average
- Complies with the requirements of the Buy American Act of 1933.

Performance Specification

- Rated Operating Pressure: 20-125 PSI
- Rated Operating Temperature: 40-140°F

Warranty

- 5-Year Limited Cartridge Warranty
- Lifetime Limited Faucet Warranty
- 1-Year Limited Finish Warranty

Codes & Standards

- ASME A112.18.1/CSA B125.1
- ADA ANSI/ICC A117.1
- Complies with CALGreen requirements
- NSF/ANSI 372 Low Lead Content
- NSF/ANSI 61, Section 9

Job Name _____

Item Number _____

Section/Tag _____

Model Specified _____

Architect _____

Engineer _____

Contractor _____

[ ] Submitted as Shown [ ] Submitted with Variations

Date _____



ECAST

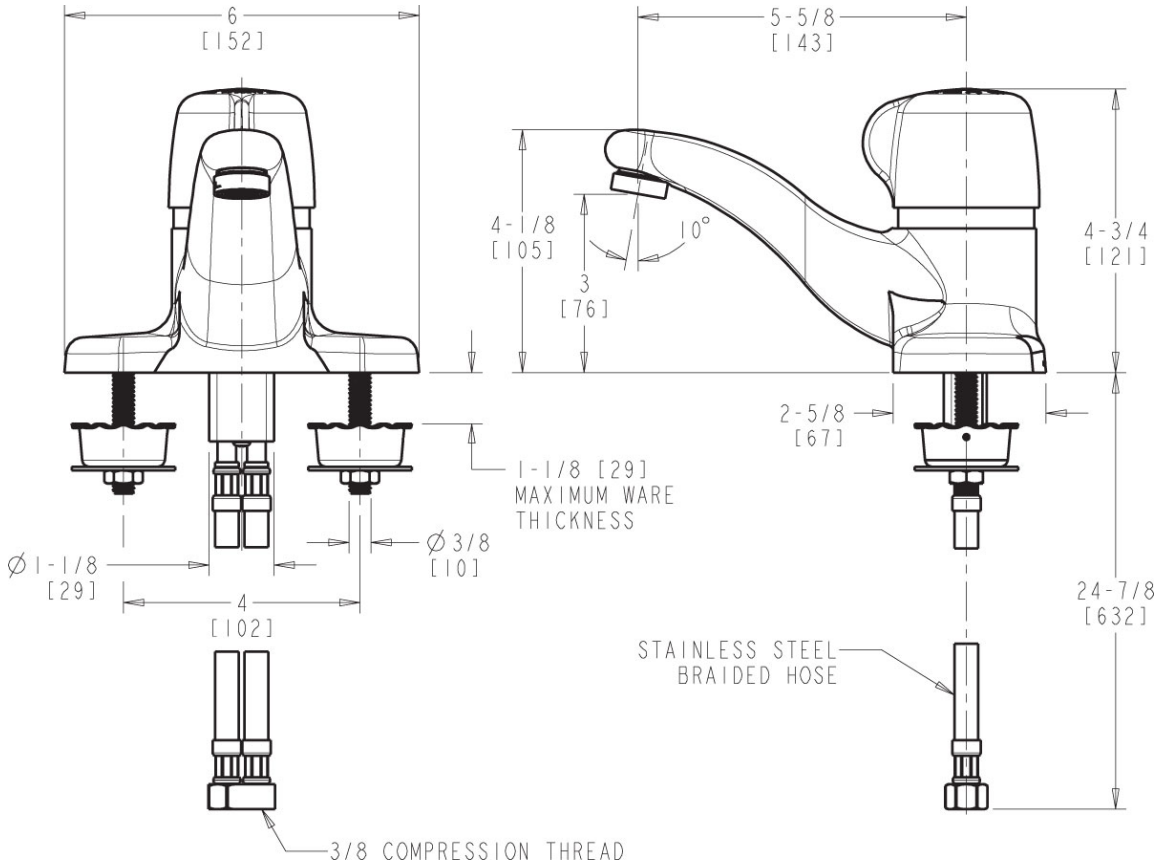
ECAST products are intended for installation where state laws and local codes mandate lead content levels or in any location where lead content is a concern.

2100 South Clearwater Drive
Des Plaines, IL
P: 847/803-5000
F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

3600-E39VPAB

Architect/Engineer Specification

Chicago Faucets No. 3600-E39VPAB, Sink Faucet for hot and cold water, metering, deck-mounted with 4" fixed centers, chrome plated. Integral cast brass spout, 5-5/8" center-to-center. 0.35 GPM (1.3 L/min) vandal-proof, pressure compensating, Econo-Flo, non-aerating spray. MVP self-closing, auto-timed metering cartridge, adjustable run time from 2 to 25 seconds, opens with push, 0.20 max gallon/cycle. Stainless steel supply hoses included. ECAST® construction with less than 0.25% lead content by weighted average.



Operation and Maintenance

Installation should be in accordance with local plumbing codes. Flush all pipes thoroughly before installation. After installation, remove spout outlet or flow control and flush faucet thoroughly to clear any debris. Care should be taken when cleaning the product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap and warm water for cleaning and protecting the life of Chicago Faucet products. For specific operation and maintenance refer to the installation instructions and repair parts documents that are located at www.chicagofaucets.com.

Chicago Faucets, member of the Geberit Group, is the leading brand of commercial faucets and fittings in the United States, offering a complete range of products for schools, laboratories, hospitals, office buildings, food service, airports and sport facilities. Call 1.800.TECTRUE or 1.847.803.5000 Option 1 for installation or other technical assistance.

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Technical: 800/TEC-TRUE
www.chicagofaucets.com

ACCESSORIES AND PARTS

337-CP

Product Type

Grid Strainer Offset Waste

Features & Specifications

- 1-1/4" O.D. Tailpiece
- CFNow! Item Ships in 3 Days

Codes & Standards

- ASME A112.18.2/CSA B125.2

Job Name _____

Item Number _____

Section/Tag _____

Model Specified _____

Architect _____

Engineer _____

Contractor _____

[ ] Submitted as Shown [ ] Submitted with Variations

Date _____

L-1

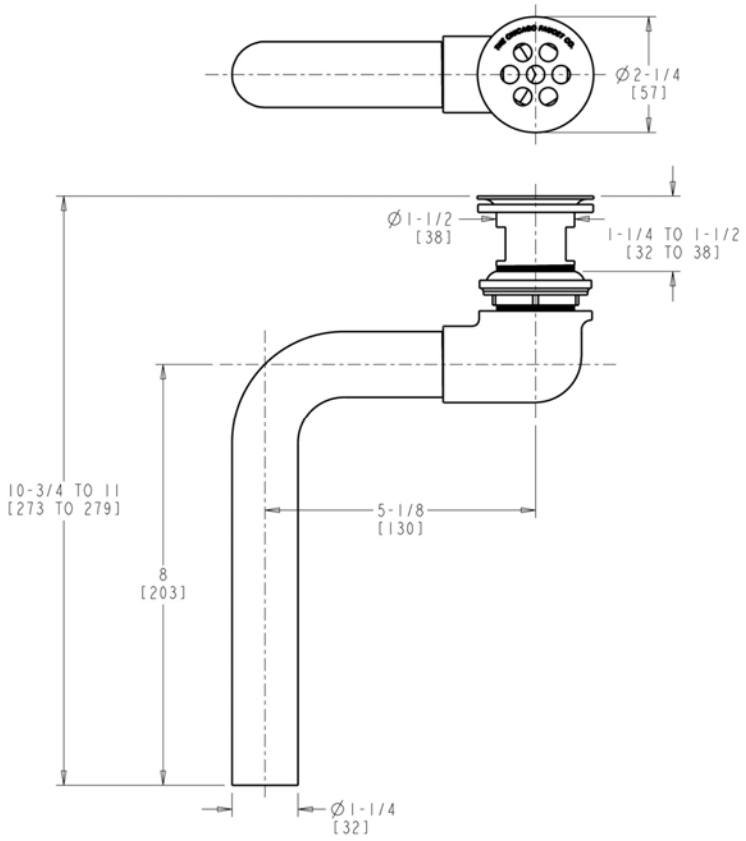


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F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

337-CP

Architect/Engineer Specification

.



Operation and Maintenance

Installation should be in accordance with local plumbing codes. Flush all pipes thoroughly before installation. After installation, remove spout outlet or flow control and flush faucet thoroughly to clear any debris. Care should be taken when cleaning the product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap and warm water for cleaning and protecting the life of Chicago Faucet products. For specific operation and maintenance refer to the installation instructions and repair parts documents that are located at www.chicagofaucets.com.

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F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

Dearborn® Brass
4675 W. 160th St.
Cleveland, Ohio 44135
Ph: (800) 321-9532
Fax: (800) 321-9535
www.dearbornbrass.com

SUBMITTAL SPECIFICATION

L.A. Code Trap

Engineering Specification: L.A. Code trap is designed for use in tubular drain applications

Job Reference

L-1



DESCRIPTION

- Rough Brass Finish
- 17 Gauge Brass
- Brass nut(s)
- Brass 90 Degree Elbow
- Rubber Gasket

✓	Product No.	Description	Carton Quantity
	H751-3	1-1/2" x 2" L.A. Trap – 17 Ga., Unfinished, Cutcase Box	6
	750-1	1-1/2" Repair Trap – 17 Ga. w/ Reducing Poly Washer	10
	750-3	1-1/2" Repair Trap – 17 Ga. w/ Reducing Poly Washer, Unfinished	10

Data is subject to manufacturing tolerances.

MECHANICAL FAUCETS

1006-ABCP

Stops and Supplies

Product Type

Angle Stop Fitting with Supply Tube and Loose Key

Features & Specifications

- Stops with 1/2" Inlet
- 2-1/4" Tee Handle
- Slow Compression Operating Cartridge
- 1/2" NPT Female Thread Inlet
- 1/2" O.D. Female Compression Outlet
- Slip Wall Flange
- 1/2" O.D. x 12" Bullnose Flexible Supply Riser
- ECAST® design provides durable construction with total lead content equal to or less than 0.25% by weighted average
- CFNow! Item Ships in 3 Days

Performance Specification

- Rated Operating Pressure: 20-125 PSI
- Rated Operating Temperature: 40-140ºF

Warranty

- Lifetime Limited Faucet Warranty
- 5-Year Limited Cartridge Warranty
- 1-Year Limited Finish Warranty

Codes & Standards

- ASME A112.18.1/CSA B125.1
- Certified to NSF/ANSI 61, Section 9 by CSA
- California Health and Safety Code 116875 (AB1953-2006)
- Vermont Bill S.152
- NSF/ANSI 372 Low Lead Content

Job Name _____

Item Number _____

Section/Tag _____

Model Specified _____

Architect _____

Engineer _____

Contractor _____

[ ] Submitted as Shown [ ] Submitted with Variations

Date _____

L-1



ECAST products are intended for installation where state laws and local codes mandate lead content levels or in any location where lead content is a concern.

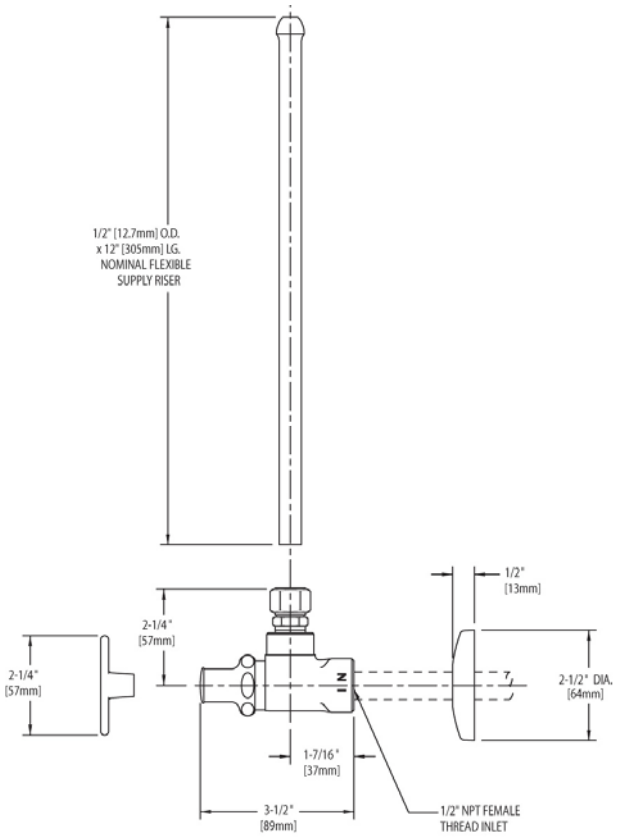
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F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

1006-ABCP

Stops and Supplies

Architect/Engineer Specification

Chicago Faucets No. 1006-ABCP, Angle Stop Fitting with supply tube and loose key, chrome plated. 2-1/4" metal tee handle with square, tapered broach. Slow compression rebuildable cartridge, opens and closes 360º for fine adjustment, closes with water pressure, features square, tapered stem. 1/2" NPT female thread inlet and 1/2" O.D. female compression outlet. Slip wall flange. 1/2" O.D. x 12" bullnose flexible supply riser. ECAST® construction with less than 0.25% lead content by weighted average. This product is tested and certified to industry standards: ASME A112.18.1/CSA B125.1, Certified to NSF/ANSI 61, Section 9 by CSA, California Health and Safety Code 116875 (AB1953-2006), Vermont Bill S.152, and NSF/ANSI 372 Low Lead Content. This product is tested and certified to industry standards: ASME A112.18.1/CSA B125.1, Certified to NSF/ANSI 61, Section 9 by CSA, California Health and Safety Code 116875 (AB1953-2006), Vermont Bill S.152, and NSF/ANSI 372 Low Lead Content.



Operation and Maintenance

Installation should be in accordance with local plumbing codes. Flush all pipes thoroughly before installation. After installation, remove spout outlet or flow control and flush faucet thoroughly to clear any debris. Care should be taken when cleaning the product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap and warm water for cleaning and protecting the life of Chicago Faucet products. For specific operation and maintenance refer to the installation instructions and repair parts documents that are located at www.chicagofaucets.com.

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LAV GUARD® 2
FAST FIT UNDERSINK PIPING COVERS

All New E-Z Series

L-1

ADA-compliant undersink protection

TRUEBRO® IPS CORPORATION

Submittal Sheet

General Description:

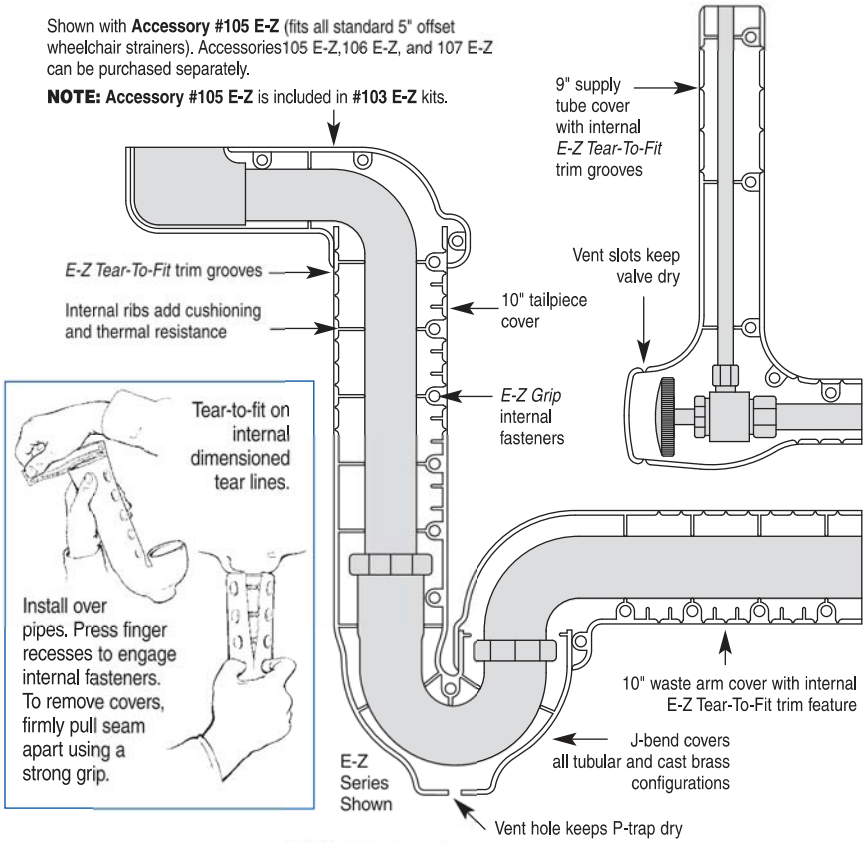
LAV GUARD® 2 E-Z Series waste and supply piping covers satisfy ADA compliance requirements. Built-in *E-Z Grip* internal fasteners and internal, *E-Z Tear-To-Fit* trimming feature allow for fast installation without tools. *Series #100 E-Z* kits are designed to fit on all tubular and cast brass P-trap assemblies. *Series #400* kits are the "original" LAV GUARD design and fit schedule 40 ABS and PVC P-trap assemblies — regardless of their geometry or rotational offset. Valve cover completely encloses angle valve and supply tube for both handled and keyed type water stops.

Material	Molded vinyl
Nominal Wall	1/8" constant
Durometer	70 - 80 - Shore A
UV Protection	Will not fade or discolor
Durability	Virtually indestructible
Trimming (E-Z Series)	Internal, *E-Z Tear-To-Fit* trim feature
Fasteners (E-Z Series)	Internal *E-Z Grip* fasteners (reusable)
Color	China white
Paintability	Apply Latex paint
Burning Characteristics ASTM D-635	Self extinguished 0 sec (ATB) 0 mm (AEB)
Bacteria/Fungus Resistance	ASTM G21 and G22/ Result: 0 growth
Maintenance	Use common detergents

Manufactured under one or more of the following U.S. or Canadian patents. Other patents pending.
5,303,730 5,360,031 5,524,669 5,564,463 5,678,598 5,699,828 5,915,412 5,915,413 5,901,739 5,960,820 2,075,324 2,119,427 2,136,027 2,158,083

TRUEBRO® IPS CORPORATION

IPS Corporation, 202 Industrial Park Lane, Collierville, TN 38017
(901) 853-5001 (800) 340-5969 FAX: (901) 853-5008
e-mail: info@truebro.com Internet: http://www.truebro.com



#100 E-Z Series *(shown above right) for tubular and cast brass P-trap assemblies.*
#400W* Series *(original design) for schedule 40 P-trap assemblies.*

☐ **Model #99 E-Z**
One angle valve and supply cover

☐ **Model #100 E-Z**
One P-trap

☐ **Model**
One P-trap

☐ **Model**
One P-trap valve cover

☐ **Model**
One P-trap valve cover

*All #400W constructio

☐ **Model #102 E-Z**
One P-trap cover, two angle valves and covers

☐ **Model #402W***
One P-trap cover, two angle valves and covers

☐ **Model #103 E-Z**
One P-trap cover, two angle valves and supply covers, one 5" offset tailpiece wheelchair strainer cover

☐ **Accessory #105 E-Z**
One 5" offset tailpiece wheelchair strainer assembly

nal" LAV GUARD® design and nge without notice.

☐ **Accessory #105-K**
Kohler 6" offset

☐ **Accessory #106 E-Z**
One basket strainer cover and offset waste cover (adjustable to 18")

☐ **Accessory #107 E-Z**
Two basket strainer covers and center or end outlet waste cover (adjustable)

☐ **Accessory #Ex99 E-Z**
One 16" extension for water supply

☐ **Accessory #Ex100 E-Z**
One 16" extension for drain waste arm or tailpiece



Accessory 107 E-Z
(Configuration Options Shown)



Job/Location _____

Designer _____

TRUEBRO reserves the right to make product and material changes at any time without notice. 2/07

ELKAY®
SPECIFICATIONS

Elkay ezH2O Vandal-Resistant Bottle Filling Station & Bi-Level Cooler Non-Filtered Refrigerated Stainless
Model VRCTL8WSK

PRODUCT SPECIFICATIONS

Elkay ezH2O® Vandal-Resistant Bottle Filling Station & Bi-Level Cooler Non-Filtered Refrigerated Stainless. Chilling Capacity of 8.0 GPH (gallons per hour) of 50° F drinking water, based on 80° F inlet water and 90° F ambient, per ASHRAE 18 testing. Features shall include Green Ticker™, Laminar Flow, Real Drain, Vandal Resistant. Furnished with Vandal Resistant bubbler. Electronic Bottle Filler Button with Mechanical Front Bubbler Button activation. Product shall be Wall Mount (On Wall), for Indoor + Outdoor applications, serving 2 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. 120.

Special Features:	Green Ticker™, Laminar Flow, Real Drain, Vandal Resistant
Finish:	Stainless Steel
Power:	115V/60Hz
Bubbler Style:	Vandal Resistant
Activation by:	Electronic Bottle Filler Button with Mechanical Front Bubbler Button
Mounting Type:	Wall Mount (On Wall)
Chilling Capacity*:	8.0 GPH
Full Load Amps	1
Rated Watts:	370
Dimensions (L x W x H):	36-1/8" x 18-5/8" x 38-13/16"
Approx. Shipping Weight:	118 lbs.
Installation Location:	Indoor + Outdoor
No. of Stations Served:	2
*Based on 80° F inlet water & 90° F ambient air temp for 50° F chilled drinking water.	
**When used in non-temperature controlled environments, unit(s) must be adequately winterized and/or protected from extreme heat to prevent damage where climates dictate.	

- Mechanically-Activated unit continues to supply water in event of service disruptions.
- Green Ticker: Informs user of number of 20 oz. plastic water bottles saved from waste.
- Laminar flow provides clean fill with minimal splash.
- Real Drain System eliminates standing water.

COOLING SYSTEM

- Compressor: Hermetically-sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.
- Condenser: Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
- Cooling Unit: Combination tube-tank type. Continuous copper tubing with is fully insulated with EPS foam that meets UL requirements for self-extinguishing material.
- Refrigerant Control: Refrigerant R-134a is controlled by accurately calibrated capillary tube.
- Temperature Control: Easily accessible enclosed

PART:_____QTY: _____

PROJECT:_____

CONTACT:_____

DATE:_____

NOTES:_____

APPROVAL:_____

EWC-1
ADA



Included with Product: **Water Cooler (VRCTL8WSC), Bottle Filler (VRCWS)**

▼ Ships in multiple boxes.

A Century of Tradition and Quality.
For more than 100 years, Elkay has been making innovative products and providing exceptional customer care. We take pride in offering plumbing products that make life easier, inspire change and leave the world a better place.

BUILT IN USA OF DOMESTIC AND FOREIGN PARTS

PRODUCT COMPLIANCE

ADA & ICC A117.1
ASME A112.19.3/CSA B45.4
CAN/CSA C22.2 No. 120
GreenSpec®
NSF/ANSI 61 (Q≤1) & 372 (lead free)
UL 399

c UL us | IAPMO R&T | GreenSpec® LISTED www.GreenSpec.com

Complies with ADA & ICC A117.1 accessibility requirements when installed according to the requirements outlined in these standards. Installation may require additional components and/or construction features to be fully compliant. Consult the local Authority Having Jurisdiction if necessary.

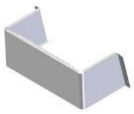
Installation Instructions (PDF) - 98982C

5 Year Limited Warranty on the refrigeration system of the unit. Electrical components and water system are warranted for 12 months from date of installation. **Warranty pertains to drinking water applications only. Non-drinking water applications are not covered under warranty.**

Warranty (PDF)

In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice. Please visit elkay.com for the most current version of Elkay product specification sheets. This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements.

Optional Accessories		
EWF3000	Elkay Universal Filtration Kit (3000-Gallon) Spec Sheet (PDF)	
98324C	Cane Apron for HAC HVR EMABF & VRC Models (Stainless) Spec Sheet (PDF)	
36292C	Power Block for Multistation Bottle Filling Stations Spec Sheet (PDF)	

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Elkay ezH2O Vandal-Resistant Bottle Filling Station & Bi-Level Cooler Non-Filtered Refrigerated Stainless
Model VRCTL8WSK

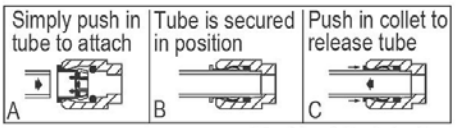
IMPORTANT!
INSTALLER PLEASE NOTE :

This water cooler has been designed and built to provide water to the user which has not been altered by materials in the cooler waterways. The grounding of electrical equipment such as telephone, computer, etc. to water lines is a common procedure. The grounding may be in the building but may also occur away from the building. This grounding can cause electrical feedback into a water cooler creating an electrolysis which creates a metallic taste or causes an increase in the metal content of the water. This condition is avoidable by installing the cooler using the proper materials as shown below.

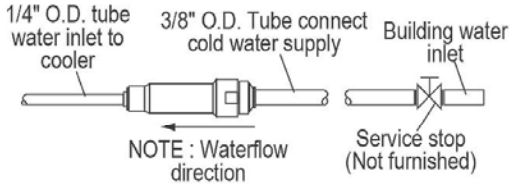
NOTICE

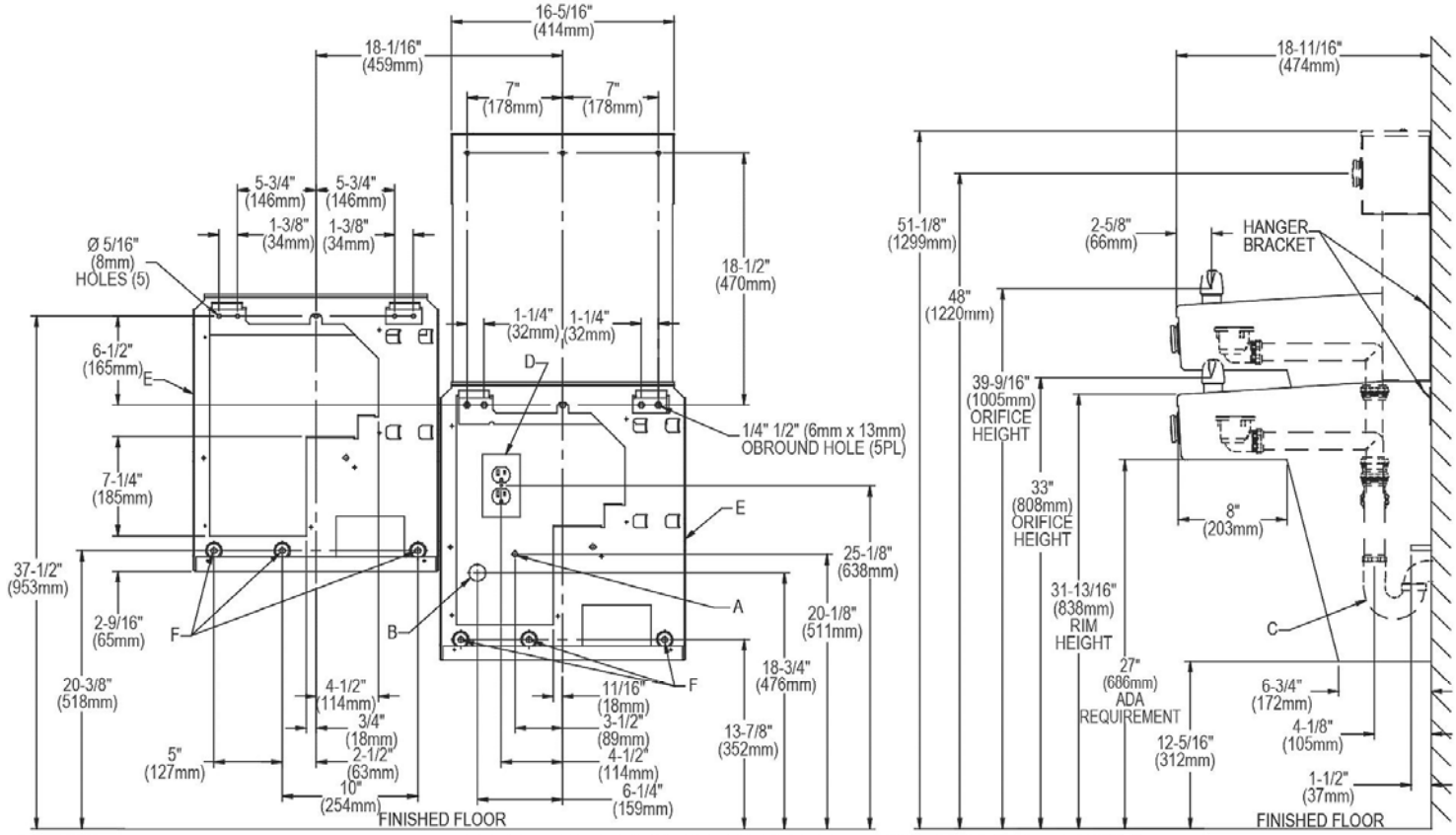
This water cooler must be connected to the water supply using a dielectric coupling. The cooler is furnished with a non-metallic strainer which meets this requirement. The drain trap which is provided by the installer should also be plastic to completely isolate the cooler from the building plumbing system.
Bottle filler unit on bracket attached to wall by 6 holes (as shown). Water and electrical will connect through pre-punched hole in basin.
These products are designed to operate on 20 psi to 105 psi supply line pressure. Simultaneous operation of both bubblers on a bi-level unit may not be possible depending on water supply pressure. If simultaneous operation is desired, please ensure a minimum of 50 psi supply.

OPERATION OF QUICK CONNECT FITTINGS



Pushing tube in before pulling it out helps to release tube





REDUCE HEIGHT BY 3" FOR INSTALLATION OF CHILDREN'S ADA COOLER

LEGEND:
A = Recommended Water Supply location. Shut-off Valve (not furnished) to accept 3/8" O.D. unplated copper tube. Up to 3" (76mm) maximum out from wall.
B = Recommended Waste Outlet location. To accommodate 1-1/2" nominal drain. Drain stub 2" (51mm) out from wall.
C = 1-1/2" Trap (not furnished).
D = Electrical Supply (3) Wire Recessed Box Duplex Outlet.
E = Insure proper ventilation by maintaining 6" (152mm) minimum clearance from cabinet louvers to wall.
F = 7/16" (11mm) Bolt Holes for fastening to wall.
Note : New Installations Must Use Ground Fault Circuit Interrupter (GFCI). It is highly recommended that the circuit be dedicated and the load protection be sized for 20 amps.

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906-1
908-1
910-1

906-1 • 908-1 • 910-1

906-1 • 908-1 • 910-1

12" x 12" Floor Sink with Seepage Flange*
Acid Resistant Enamel on Cast Irc
Includes Dome Strainer

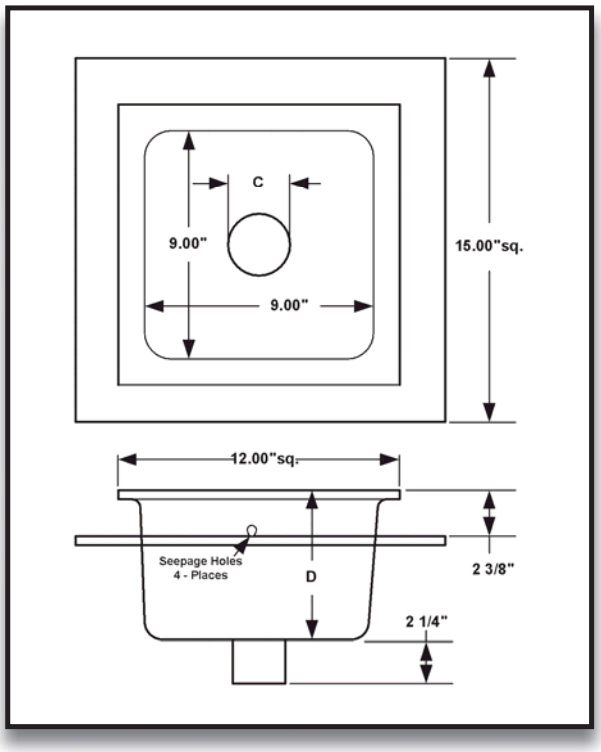
Available in Caulk & No Hub
2", 3", & 4" Outlet

Accessories: (Sold Separately)
Plastic Sediment Bucket
Top Grate

*Flange Dimension 15" x 15"

FS-1





Cat. No.	Size	Outlet		Ship Wt.	
		C-ID	C-OD	D	
906-1-2"	12" x 12" x 6"	2 5/8"	2 1/4"	6"	30 lbs.
906-1-3"	12" x 12" x 6"	3 5/8"	3 1/4"	6"	30 lbs.
906-1-4"	12" x 12" x 6"	4 5/8"	4 1/4"	6"	30 lbs.
908-1-2"	12" x 12" x 8"	2 5/8"	2 1/4"	8 1/2"	35 lbs.
908-1-3"	12" x 12" x 8"	3 5/8"	3 1/4"	8 1/2"	35 lbs.
908-1-4"	12" x 12" x 8"	4 5/8"	4 1/4"	8 1/2"	35 lbs.
910-1-2"	12" x 12" x 10"	2 5/8"	2 1/4"	10 1/2"	40 lbs.
910-1-3"	12" x 12" x 10"	3 5/8"	3 1/4"	10 1/2"	40 lbs.
910-1-4"	12" x 12" x 10"	4 5/8"	4 1/4"	10 1/2"	40 lbs.

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FLOOR SINKS

Acid Resistant Enamel on Cast Iron

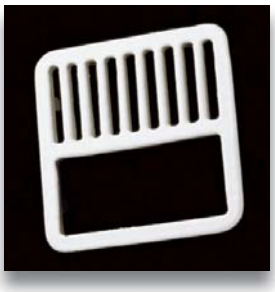
FS-1



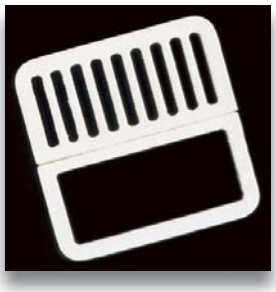
900 Full Top Grate



934 3/4 Top Grate



912 Half Top Grate



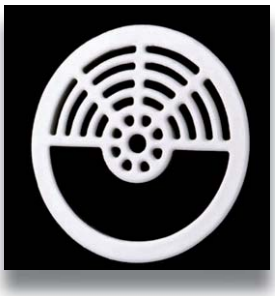
912-2 Split Half Top Grate



1000 Full Round Top Grate



1034 3/4 Round Top Grate



1012 1/2 Round Top Grate



902 Dome Strainer
(Cast Aluminum-Not Enameled)

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DOWNEY UNIFIED SCHOOL DISTRICT

GENERAL NOTES

THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE, AND THE OWNER'S CONSULTANTS WILL ASSUME NO RESPONSIBILITY FOR VARIANCES BETWEEN ACTUAL EXISTING CONDITIONS AND CONDITIONS DEPICTED AS EXISTING ON THE DRAWINGS.

THE CONTRACTOR SHALL INSPECT THE SITE AND THE BUILDINGS, AND SHALL VERIFY TO HIS OWN SATISFACTION THE CONDITIONS SHOWN ON THE DRAWINGS, WHICH MATERIALLY AFFECT THE CONTRACTOR'S ABILITY TO EXECUTE THE WORK. HE SHALL IMMEDIATELY INFORM THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE DRAWINGS.

THE CONTRACTOR SHALL ASSUME THAT THERE MAY BE MINOR DIFFERENCES BETWEEN ACTUAL FIELD CONDITIONS AND CONDITIONS DEPICTED AS EXISTING ON THE DRAWINGS. THE OWNER WILL NOT CONSIDER REQUESTS FROM THE CONTRACTOR FOR ADDITIONAL CHARGES DUE TO SAID MINOR DISCREPANCIES.

IF THE CONTRACTOR ENCOUNTERS MAJOR DIFFERENCES BETWEEN ACTUAL FIELD CONDITIONS AND CONDITIONS DEPICTED AS EXISTING ON THE DRAWINGS, THE CONTRACTOR SHALL STOP WORK IN THE AFFECTED AREA, AND SHALL IMMEDIATELY NOTIFY THE OWNER OR OWNER'S DESIGNATED REPRESENTATIVE OF SAID DIFFERENCES. THE OWNER OR OWNER'S DESIGNATED REPRESENTATIVE WILL PROVIDE INSTRUCTIONS FOR PROCEEDING IN THE AFFECTED AREA. THE CONTRACTOR SHALL PROCEED WITH ALL OTHER WORK ITEMS AS REQUIRED BY THE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITIONS THEREON, AND THOROUGHLY ACQUAINT HIMSELF WITH OBSTACLES AND ADVANTAGES FOR PERFORMING THE WORK. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS, AS THERE ARE REQUIREMENTS SHOWN THEREIN THAT SIGNIFICANTLY AFFECT THE SCOPE OF THE WORK. NO ADDITIONAL CHARGES WILL BE CONSIDERED FOR WORK CAUSED BY THE CONTRACTOR'S UNFAMILIARITY WITH THE SITE, AND THE DRAWINGS AND SPECIFICATIONS, OR FAILURE OF THE OWNER OR THE OWNER'S DESIGNATED REPRESENTATIVE OR OWNER'S CONSULTANTS TO ENUMERATE THE COMPLETE SCOPE OF WORK, AS REQUIRED BY THE CONTRACT DOCUMENTS, IN THE "SCOPE OF WORK" NOTES.

THE DRAWINGS IDENTIFY MATERIALS BY GENERIC NAME, UNLESS PREFACED WITH "BASIS OF DESIGN". FOR A DESCRIPTION OF APPROVED MATERIALS AND INSTALLATION PROCEDURES SEE THE SPECIFICATIONS.

UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE SELECTION OF COLORS AND TEXTURES FOR FINISH MATERIALS SHALL BE PROVIDED BY THE ARCHITECT PRIOR TO EXECUTION OF THE WORK.

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY GOVERNING AUTHORITIES FOR THE COMPLETION OF THE WORK. THE FEES, CHARGES OR OTHER COSTS PAID BY THE CONTRACTOR FOR SAID PERMITS WILL BE REIMBURSED TO THE CONTRACTOR BY THE OWNER IN THE AMOUNTS SO PAID.

THE CONTRACTOR SHALL PROCURE ALL NOTICES AND LICENSES REQUIRED FOR THE COMPLETION OF THE WORK. THE COST OF THESE NOTICES AND LICENSES IS INCIDENTAL TO OTHER ITEMS OF WORK AND NO ADDITIONAL PAYMENT WILL BE MADE FOR COSTS INCURRED BY OBTAINING NOTICES AND LICENSES OR IN CONFORMING TO THE REQUIREMENTS THEREOF.

THE GENERAL CONDITIONS AND ANY SUPPLEMENTAL CONDITIONS WHICH MAY BE ATTACHED OR INCLUDED AS PART OF OWNER CONTRACTOR AGREEMENT ARE A PART OF THESE CONTRACT DOCUMENTS.

SPECIFICATIONS, WHICH ARE BOUND SEPARATELY, ARE PART OF THE CONTRACT. REFERENCE TO SECTIONS OF THE SPECIFICATIONS IN THE NOTES DESCRIBING THE SCOPE OF WORK ARE INTENDED AS A GUIDE ONLY AND TO ASSIST THE CONTRACTOR IN UNDERSTANDING THE COMPLETE SCOPE OF WORK.

ALL CONTRACTORS, SUB OR GENERAL, BIDDING OR CONSTRUCTING ANY PORTION OF THIS PROJECT, SHALL BE HELD TO BE RESPONSIBLE TO REVIEW AND INCLUDE IN ANY BID SUBMITTED, ALL OTHER DRAWINGS AND SPECIFICATIONS, WHICH FORM A PART OF THESE CONSTRUCTION DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ARCHITECTURAL, GENERAL NOTES, CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND EQUIPMENT PLANS AS MAY APPLY TO SAID TRADE BIDDING.

THE CONTRACTOR SHALL VERIFY ALL SIZES OR PREPARATORY WORK FOR EQUIPMENT OF OTHERS AND SHALL COORDINATE THE WORK ON THIS CONTRACT WITH ALL WORK FURNISHED BY OTHERS.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND ALL EXISTING CONDITIONS AT THE SITE BEFORE COMMENCING WORK, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO THE START OF WORK.

IF ANY ERRORS OR OMISSION APPEAR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF SUCH ERRORS OR OMISSIONS. IF THE CONTRACTOR FAILS TO GIVE SUCH NOTICE IMMEDIATELY, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF SUCH ERRORS OR OMISSIONS AND FOR THE COST OF RECTIFYING SAME.

IN CASE OF DISCREPANCIES BETWEEN ARCHITECTURAL AND CONSULTANT DRAWINGS, THE ARCHITECT WILL DETERMINE THE CORRECT INTENT OF THE WORK.

SHOULD THE DRAWINGS IN THEMSELVES OR WITH THE SPECIFICATIONS OR SHOULD THE SPECIFICATIONS IN THEMSELVES DISAGREE, THE HIGHER QUALITY AND / OR GREATER QUANTITY OF WORK OR MATERIAL SHALL BE ESTIMATED UPON, AND UNLESS OTHERWISE CLARIFIED IN WRITING BY THE ARCHITECT, SHALL BE FURNISH AND INSTALLED.

THE CONTRACTOR SHALL NOT DEVIATE FROM THE DESIGN INTENT AND CONSTRUCTION DETAILS WITHOUT OBTAINING PRIOR APPROVAL FROM THE OWNER AND THE ARCHITECT.

DETAILS ARE NOT INTENDED TO SHOW METHOD AND MANNER OF ACCOMPLISHING THE WORK. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT THE JOB DIMENSIONS OR CONDITIONS AND SHALL BE INCLUDED AS PART OF THE WORK.

DIMENSIONS ARE TO FACE OF STUD (FOS), FACE OF CONCRETE (FOC) OR FACE OF MASONRY (FOM) UNLESS NOTED OTHERWISE. DIMENSIONS AS SHOWN TAKE PRECEDENCE OVER ANY CONDITIONS GRAPHICALLY SHOWN ON THE DRAWINGS. DO NOT SCALE THE DRAWINGS. WHEN IN DOUBT, ASK THE ARCHITECT FOR A CLARIFICATION.

"TYPICAL" MEANS ALL, EXCEPT AS SPECIFICALLY NOTED. "SIMILAR" MEANS THERE ARE SLIGHT VARIATIONS AMONG CONDITIONS WHERE THE DETAIL OCCURS.

ANY WORK OR MATERIALS OF ONE TRADE DAMAGED BY ANOTHER TRADE BECOMES THE RESPONSIBILITY OF THE OFFENDING THE DAMAGED WORK SHALL BE REPAIRED OR REPLACED BY THE ORIGINAL INSTALLER AND THE COSTS BORN E BY THE OFFENDER. ANY MATERIALS STOLEN FROM THE PREMISES OR DAMAGED EITHER BEFORE OR AFTER INSTALLATION SHALL BE REPLACED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL TAKEN ALL NECESSARY PRECAUTIONS SUCH AS BARRICADES, GUARDS, ETC., AS REQUIRED TO PREVENT DAMAGE AND THEFT. SPECIAL CARE SHALL BE TAKEN TO PROTECT WORK IN PLACE, MATERIALS AND EQUIPMENT STORED, ETC., FROM THEFT AND VANDALISM.

THE CONTRACTOR SHALL MAINTAIN THE UTILITIES TO THE EXISTING BUILDING OR PROVIDE TEMPORARY SERVICE CONNECTIONS AS REQUIRED.

GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY ARRIVAL OF ALL SPECIFIED FINISH MATERIALS, EQUIPMENT, LIGHT FIXTURES AND OTHER SUCH MATERIAL'S) TO BE UTILIZED ON THIS PROJECT. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING WITHIN 30 DAYS OF THE DATE OF CONTRACT OF THOSE SPECIFIED ITEMS THAT MAY NOT BE READILY AVAILABLE AND OF EQUAL QUANTITY AND DESCRIPTION. IF NOTIFICATION IS NOT RECEIVED BY THE ARCHITECT, THE CONTRACTOR SHALL ACCEPT RESPONSIBILITY FOR THE PROPER ORDERING AND FOLLOW UP ON SPECIFIED ITEMS AND SHALL PURSUE WHATEVER MEANS NECESSARY AT NO ADDITIONAL COST TO THE OWNER, TO INSURE AVAILABILITY OF ALL SPECIFIED ITEMS SO AS NOT TO CREATE A HARDSHIP ON THE OWNER AND NOT TO DELAY PROGRESS OF THE WORK. NO EXTENSION OF TIME TO THE CONTRACT WILL BE ALLOWED FOR THE CONTRACTOR'S INABILITY TO SECURE SPECIFIED ITEMS.

CONTRACTOR SHALL PROVIDE AND LOCATE ACCESS PANELS AS REQUIRED AFTER INSTALLATION OF MECHANICAL DUCTS, PLUMBING AND ELECTRICAL WORK. COORDINATE WITH ARCHITECT. CONTRACTOR SHALL PROVIDE A LAYOUT OF ALL ACCESS PANELS TO THE OWNER, OWNER'S REPRESENTATIVE AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF EQUIPMENT REQUIRING SAID ACCESS PANELS.

WHERE FACTORY FINISHED OR FACTORY PRIMED ITEMS OCCUR, SUCH AS GRILLS, DIFFUSERS, METAL TRIM AND ACCESSORIES, ETC., THEY SHALL BE PAINTED TO MATCH THE ADJACENT SURFACE AS DIRECTED BY THE ARCHITECT.

CONTRACTOR SHALL COORDINATE THE WORK AMONG ALL TRADES RELATING TO THE MOUNTING AND ATTACHMENTS OF ALL EQUIPMENT AS REQUIRED.

CONTRACTOR SHALL PROVIDE AND COORDINATE THE EXACT DIMENSIONS, SIZES AND POSITIONS OF OPENINGS IN SLABS AND WALLS NECESSARY FOR THE INSTALLATION OF THE WORK.

CONTRACTOR SHALL PROVIDE MOUNTING PLATES AS REQUIRED BEHIND ALL WALL-MOUNTED ITEMS SUCH AS HANDRAILS, RESTROOM PARTITIONS, RESTROOM ROOM ACCESSORIES, LIGHT FIXTURES, ETC..

CONTRACTOR SHALL MAINTAIN CONTINUOUS DUST ABATEMENT PROCEDURES INCLUDING VACUUMING, TRASH REMOVAL AND MATS AT ALL ENTRIES TO THE CONSTRUCTION AREA. PROVIDE EFFECTIVE DUST CONTROL BY MEANS OF FREQUENT SPRINKLING AND WATERING. EXCESSIVE BLOWING OF DUST OR CONCRETE MAY BE PUMPED. THE JOB SITE SHALL BE LEFT CLEAN AND ORDERLY AT THE END OF EACH DAY.

CONTRACTOR SHALL AT ALL TIMES KEEP THE SITE CLEAN AND FREE OF ALL WASTE MATERIAL OR RUBBISH CAUSED BY HIS OPERATIONS. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL WASTE MATERIALS AND RUBBISH FROM AND ABOUT THE PROJECT AS WELL AS ALL TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY AND SURPLUS MATERIALS. NEW WORK SHALL CONFORM TO THE REQUIREMENTS OF THE EXISTING CONSTRUCTION TYPE. DRINKING WATER WELL SHALL COMPLY WITH ALL LOCAL HEALTH DEPARTMENT REQUIREMENTS.

DO NOT ALTER OR REMOVE ANY EXISTING SHEAR WALLS OR BEARING WALLS UNLESS SO IDENTIFIED ON THE DRAWINGS AND APPROPRIATE DETAILS ARE PROVIDED AND APPROVED BY D.S.A. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES. FOR FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION COMPLY WITH CFC CHAPTER 14

SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OF NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE CALIFORNIA CODE OF REGULATIONS, AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK.

RENOVATION NOTES

COORDINATE ALL DEMOLITION WORK WITH REPAIR WORK. COORDINATE ARCHITECTURAL, AND REFRIGERATOR / FREEZER MANUFACTURER'S DRAWINGS, EACH WITH THE OTHERS, FOR LOCATIONS, EXTENT OF WORK AND SIZES.

THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED AND/OR DEMOLISHED MATERIAL, WASTE AND DEBRIS CAUSED BY THE NEW WORK. THIS MATERIAL SHALL BE REMOVED FROM THE PROPERTY AND TAKEN TO A LEGALLY OPERATED DISPOSAL SITE.

MATERIALS, EQUIPMENT OR CONSTRUCTIONS NOT NOTED IN THE CONSTRUCTION DOCUMENTS, ARE A PART OF THE WORK, AND IF DISCOVERED DURING THE COURSE OF THE WORK, SHALL BE REPORTED FOR INSTRUCTIONS PRIOR TO REMOVAL OR ABANDON IN PLACE.

IN ADDITION TO DEMOLITION SHOWN, CUT, MOVE, DISMANTLE OR SALVAGE ITEMS NECESSARY TO PROVIDE ACCESS TO ALLOW REPAIR WORK TO PROCEED. INCLUDE SUCH ITEMS SUCH AS :

A. REPAIR OR REMOVAL OF HAZARDOUS OR UNSANITARY CONDITIONS.

B. REMOVAL OF ABANDONED ITEMS AND ITEMS SERVING NO USEFUL PURPOSE SUCH AS ALL ABANDONED PIPING, CONDUIT AND WIRING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXPOSED EXISTING STRUCTURES AT THE WORK AREA FROM WEATHER AND OTHER INCLEMENT CONDITIONS AND FROM THE INSTALLATION OF OTHER WORK. ANY DAMAGE INCURRED DUE TO FAILURE BY THE CONTRACTOR TO PROPERLY PROTECT SUCH WORK, SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

ALL ADJACENT WORK AND CONSTRUCTIONS DAMAGED DUE TO DEMOLITION SHALL BE REPAIRED AS PART OF THIS CONTRACT

DSA NOTES

ALL WORK SHALL CONFORM TO 2022 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).

THE SCOPE OF WORK - CLEARLY INDICATE THE SCOPE OF WORK ON THE COVER SHEET OR GENERAL NOTE SHEET OF THE DRAWINGS.

FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTORS DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR HIS PROJECT.

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGED DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.

A DSA CERTIFIED CLASS-2 PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR.

A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.

THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR)

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

APPLICABLE CODES

APPLICABLE CODES AS OF JANUARY 1, 2023:

2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.

2022 CALIFORNIA ADMINISTRATIVE CODE, PART 1 OF TITLE 24

2022 CALIFORNIA BUILDING CODE, PART 2 OF TITLE 24
(BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), VOL. 1 & 2, AND 2022 CALIF AMENDMENTS)

2022 CALIFORNIA ELECTRICAL CODE, PART 3 OF TITLE 24
(BASED ON THE 2017 NATIONAL ELECTRICAL CODE (NEG) AND 2019 CALIFORNIA AMENDMENTS)

2022 CALIFORNIA MECHANICAL CODE, PART 4 OF TITLE 24
(BASED ON THE 2018 UNIFORM MECHANICAL CODE (UMC) AND 2019 CALIFORNIA AMENDMENTS)

2022 CALIFORNIA PLUMBING CODE, PART 5 OF TITLE 24
(BASED ON THE 2018 UNIFORM PLUMBING CODE (UPC) AND 2019 CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ENERGY CODE, PART 6 OF TITLE 24

2022 CALIFORNIA FIRE CODE, PART 9 OF TITLE 24
(BASED ON THE 2021 INTERNATIONAL FIRE CODE (IFC) AND 2022 CALIFORNIA AMENDMENTS)

2022 CALIFORNIA EXISTING BUILDING CODE, PART 10 OF TITLE 24
(BASED ON THE 2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC) AND 2022 CALIF AMENDMENTS)

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11 OF TITLE 24

2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12 OF TITLE 24

PARTIAL LIST OF APPLICABLE STANDARDS:

2022 CALIFORNIA BUILDING CODE (FOR SFM) REFERENCED STANDARDS CHAPTER 35

NFPA 13	AUTOMATIC SPRINKLER SYSTEMS	EDITION 2016
NFPA 24	PRIVATE FIRE SERVICE MAINS (CALIFORNIA AMENDED)	EDITION 2016
NFPA 72	NATIONAL FIRE ALARM CODES, (CALIFORNIA AMENDED) (NOTE SEE UL STANDARD 1971 FOR "VISUAL DEVICES")	EDITION 2016
NFPA 80	FIRE DOOR AND OTHER OPENING PROTECTIVES	EDITION 2016

SHEET INDEX

TOTAL SHEETS: 23

ARCHITECTURAL		5 SHEETS
G000	TITLE SHEET	
A001	OVERALL SITE PLAN	
A002	FIRE ACCESS SITE PLAN	
A101	ENLARGED PLANS	
A102	DETAILS	
STRUCTURAL		3 SHEETS
S001	GENERAL NOTES	
S101	PARTIAL FOUNDATION AND ROOF FRAMING PLAN	
S201	PARTIAL FOUNDATION AND ROOF FRAMING DETAILS	
ELECTRICAL		4 SHEETS
E000	ELECTRICAL COVER SHEET	
E101	RENOVATION & DEMO PLANS	
E102	FIRE ALARM & RCP	
E103	ENLARGED KITCHEN PLAN	
MECHANICAL / PLUMBING		2 SHEETS
MP001	MECHANICAL/PLUMBING SYMBOLS LIST, SCHEDULES, DETAILS	
MP101	MECHANICAL/PLUMBING DEMOLITION AND NEW FLOOR PLANS	
FOOD SERVICE MANUFACTURER DRAWINGS		9 SHEETS
FS100	FOOD SERVICE EQUIPMENT GENERAL NOTES	
FS101	FOOD SERVICE REFERENCE PLAN	
FS102	FOOD SERVICE EQUIPMENT FLOOR PLAN AND SCHEDULE	
FS201	FOOD SERVICE EQUIPMENT PLUMBING AND ELECTRICAL PLAN	
FS301	FOOD SERVICE EQUIPMENT BUILDING WORK AND REFRIGERATION PLAN	
FS302	FOOD SERVICE EQUIPMENT REFRIGERATION RACK AND DETAILS	
FS303	FOOD SERVICE EQUIPMENT WALK-IN DETAILS	
FS401	FOOD SERVICE EQUIPMENT CONSTRUCTION DETAILS	
FS402	FOOD SERVICE EQUIPMENT ATTACHMENT DETAILS	

ABBREVIATIONS

A.B.	ANCHOR BOLT
A.F.F.	ABOVE FINISH FLOOR
APPROX.	APPROXIMATELY
BD.	BOARD
BET.	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
CAB	CABINET
CF	CURB FACE
CJ	CONTROL JOINT
COL	COLUMN
CON	CONCRETE
C.M.U.	CONCRETE MASONRY UNITS
CONT	CONTINUOUS
DF	DRINKING FOUNTAIN
D.N.	DIAMETER
DIM.	DIMENSION
DIS.	DISPENSER
DIV.	DIVISION
DN.	DONW
DBL.	DOUBLE
DF	DRINKING FOUNTAIN
(E)	EXISTING
EA.	EACH
E.J.	EXPANSION JOINT
ELEC.	ELECTRIC
ELEV.	ELEVATION
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
E.G.	EXISTING GRADE
EXP	EXPANSION
EXT.	EXTERIOR
E.W.	EACH WAY
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER & CABINET
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
F.H.	FIRE HYDRANT
FIN.	FINISH
F.L.	FLOW LINE
FLASH.	FLASHING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.R.V.	FIBERGLASS REINFORCED PANELS
F.S.	FLOOR SINK
FT.	FOOT OR FEET
FURR.	FURRING
F.V.	FIELD VERIFY
GA.	GAUGE
GALV.	GALVANIZE
G.I.	GALVANIZED IRON
GL.	GLASS
GLU. LAM.	GLUE LAMINATED
GND.	GRADE
GYP.	GYPSUM
H.B.	HOSE BIBB
H.M.	HOLLOW METAL
HORZ.	HORIZONTAL
HR.	HEIGHT
HTG.	HEATING
HDWD.	HARDWOOD
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
H.B.	HOSE BIBB
H.M.	HOLLOW METAL
HORZ.	HORIZONTAL
HR.	HEIGHT
HTG.	HEATING
HDWD.	HARDWOOD
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
JAN.	JANITOR
JT.	JOINT
KIT.	KITCHEN
LAB.	LABORATORY
LAM. PLAS.	LAMINATED PLASTIC
LAV.	LAVATORY
LVR.	LOUVER
MAR.	MARBLE
MATL	MATERIAL
MAX.	MAXIMUM
M.D.	MEDICINE CABINET
M.D.B.	METAL CORNER BEAD
MECH.	MECHANICAL
MET.	METAL
MFR.	MANUFACTURER
MIN.	MININUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
MUL.	MULLION
(N)	NEW
N.	NORTH
NAT.	NATURAL
N.G.	NATURAL GRADE
N.I.A.	NOT IN CONTRACT
NO./ #	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.A.	OVERALL
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
PAR	PARTITION
PH	PANIC HARDWARE
PL	PLATE
P.L.	PROPERTY LINE
PLAS.	PLASTER
PLYWD.	PLYWOOD
R	RADIUS
REINF	REINFORCEMENT
REQ'D.	REQUIRED
REF.	RESILIENT
RM	ROOM
RO	ROUGH OPENING
S.	SOUTH
S.B.	SPLASH BLOCK
S.D.	STORM DRAIN
S.C.	SOLID CORE
SCHED.	SCHEDULE
SECT.	SECTION
SHT.	SHEET
SIM.	SIMILAR
S.M.S.	SHEET-METAL SCREW
SPEC.	SPECIFICATIONS
SQ.	SQUARE
S.S.	SERVICE SINK
SST.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYM	SYMMETRICAL
T.	TREAD
T. & B.	TOP & BOTTOM
TC	TOP OF CURB
TG	TOP OF GRATE
T. & G.	TONGUE & GROVE
TOM	TOP OF MASONRY
TOP	TOP OF PLATE
TOR	TOP OF ROOFING
TOS	TOP OF SHEATHING
TOW	TOP OF WALL
T.	TELEPHONE
TEMP.	TEMPERATURE
TR.	TRANSOM
TRANSF.	TRANSFORMER
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UR.	URINAL
V.	VENT
VAR.	VARIES
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VEST.	VESTIBULE
V.G.D.F.	VERTICAL GRAIN DOUGLAS FIR
WC	WATER CLOSET
W.	WOOD
W. GL.	WIRE GLASS
W.C.	WROUGHT IRON
WP.	WATERPROOF

CODE ANALYSIS

BUILDING D - FOOD SERVICE KITCHEN

USE:	FOOD SERVICE
OCCUPANCY:	A-2
TYPE OF CONSTRUCTION:	V-A, NON-SPRINKLERED
EXISTING HEIGHT:	1 STORY 15'-0"
ALLOWABLE HEIGHT:	40'-0" (CBC TABLE 504.3)
EXISTING HEIGHT	14'-10"
BUILDING ENCLOSED AREA:	7,676 S.F.
BUILDING OVERHANG AREA	365 S.F.
TOTAL BUILDING AREA:	8,041 S.F
BASIC ALLOWABLE BUILDING AREA:	11,500 S.F.(CBC TABLE 506.2)
AREA OF WALK-IN REPLACEMENT:	431 S.F.

NO CHANGE IN OCCUPANCY OR USE. EXISTING ORIGINAL CONSTRUCTION SHALL BE MAINTAINED UNDER THE CODE IT WAS CONSTRUCTED ALL NEW WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS LISTED ON SHEET G001.

SEISMIC DESIGN DATA:
SEISMIC RISK CATEGORY = 3
MAPPED ACCELERATION PARAMETERS
SS = 1.659
S1 = 0.595
SMS = 1.991
SM1 = NULL
SDS = 1.327
SD1 = NULL

WIND DESIGN DATA:
BASIC WIND SPEED V = 101 MPH
RISK CATEGORY III
WIND EXPOSURE C

LOS ANGELES COUNTY / FEMA FLOOD ZONE DETERMINATION WEBSITE SHOWS THIS PROPERTY IS LOCATED IN A NON-HAZARD ZONE ZONE "X" (0.2% CHANCE OF ANNUAL FLOOD).
FEMA FIRMETTE MAP 06037C1820F
EFFECTIVE DATE 9/26/2008

SCOPE OF WORK

FOOD SERVICE KITCHEN:
(BUILDING D ONLY - NO WORK IN ANY OTHER BLDG ON CAMPUS)

DEMOLITION OF EXISTING AND INSTALLATION OF NEW EXTERIOR CONCRETE SLAB MOUNTED WALK-IN REFRIGERATOR AND FREEZER UNITS AT THE SAME LOCATION WITH REUSE OF THE EXISTING UTILITIES.

RENOVATION OF ONE EXISTING SINGLE ACCOMMODATION TOILET ROOM TO PROVIDE ACCESSIBLE FACILITIES WITHIN THE FOOD SERVICE AREA.

INSTALLATION OF ONE NEW ACCESSIBLE DRINKING FOUNTAIN

DIRECTORY

ARCHITECT
RAND NICHOLL ARCHITECTURE
45901 SIRODAY AVE.
YORBA LINDA, CA 92886
TEL: 714.915.4504
CONTACT: RAND NICHOLL

STRUCTURAL ENGINEER
RTM ENGINEERING CONSULTANTS
9931 MURLANDS BLVD
IRVINE, CA 92618
TEL: 949.547.2844
CONTACT: BEN PITTS

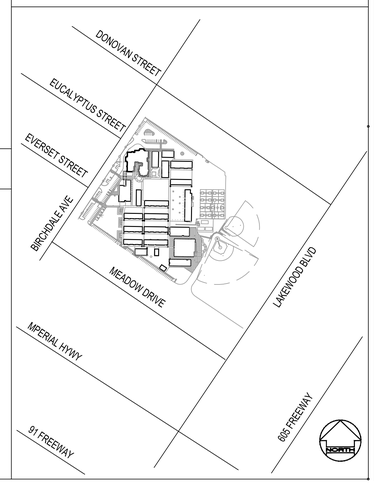
ELECTRICAL ENGINEER
AG DESIGN & ENGINEERING
2100 WEST ORANGEWOOD AVE.
ORANGE, CA 92868
TEL: 714.392.2726
CONTACT: GARY McFARLAND

MECHANICAL ENGINEER
PEZESHKI ENGINEERING
1920 E. WARNER AVENUE, SUITE 3-H
SANTA ANA, CA 92705
TEL: 714.884.3803
CONTACT: RAMON BARELA

OWNER
DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90241
TEL: 562.469.6707
CONTACT: VINCE MADSEN

FOOD SERVICE CONSULTANT
WEBB FOOD SERVICE DESIGN
1530 SO. LEWIS STREET
ANAHEIM, CA 92805
TEL: 714.508.1880
CONTACT: CESAR MARTINEZ

VICINITY MAP



RNA
RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504

LICENSED ARCHITECT RAND C. NICHOLL NO. C-19066 EXP. FEB 29, 2024 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO:	XXX
DATE:	XXX
DRAWN:	XXX
CHECK:	XX
ARCHITECT:	RN
ENGINEER:	

SHEET DESCRIPTION:
TITLE SHEET

SHEET NO:
G001

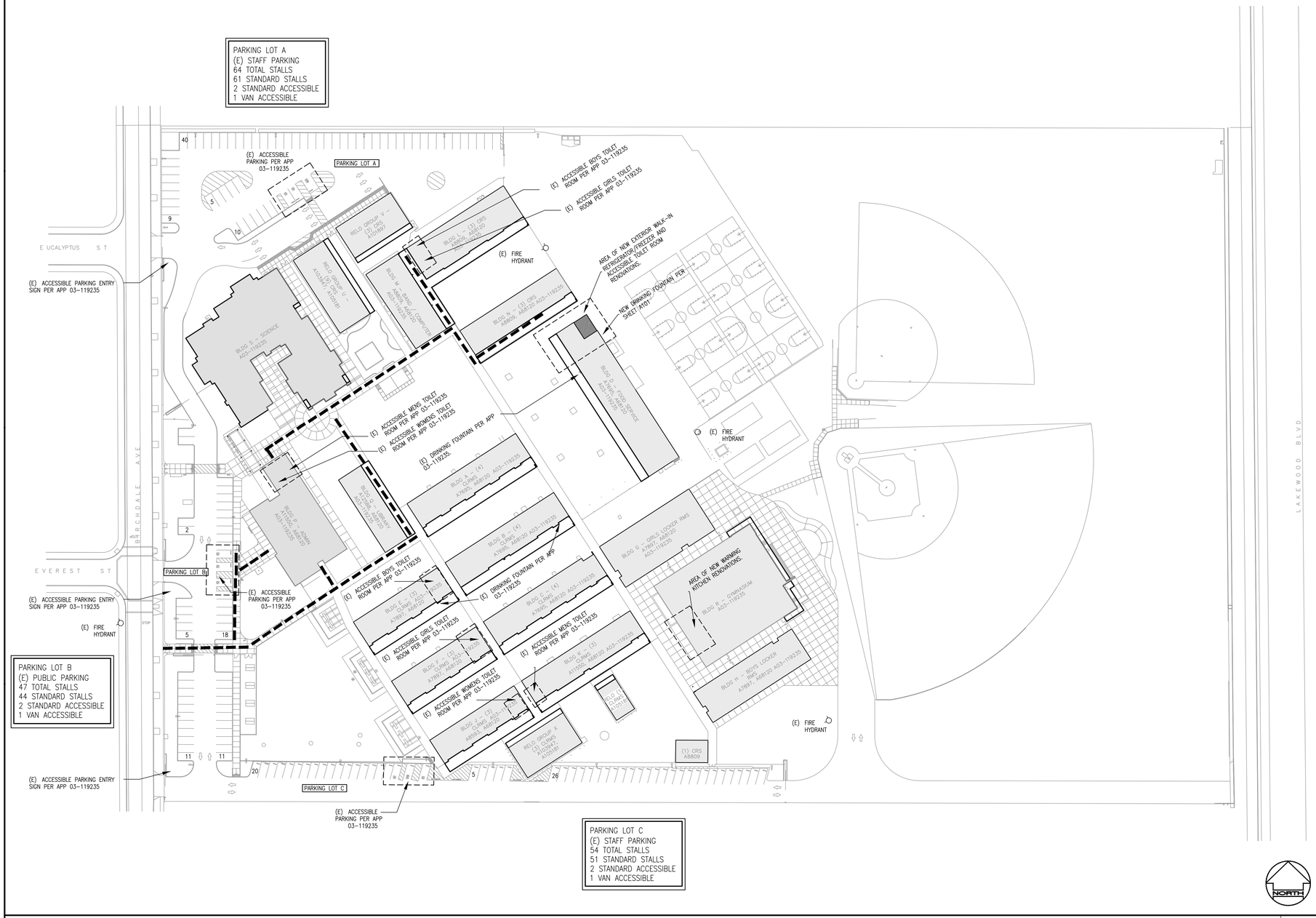
3
NTS

2
NTS

PREVIOUS PROJECT STATUS

NOTE: THERE ARE CURRENTLY NO OPEN OR UNCERTIFIED PROJECTS THAT HAVE SCOPE WITHIN BUILDING D.

APPLICATION NO.	BUILDING NAME	STATUS
A7692	ORIGINAL CONSTRUCTION	NO DOCMENTATION ON DSA PRE-TRACKER
A68120	ORIGINAL CONSTRUCTION	CLOSE LETTER #2
03-107306	GYMNASIUM	VOIDED
03-119235	CAMPUS MODERNIZATION	CERTIFICATION #1
03-119894	RELOCATABLE CLASSROOMS	DSA 301P SUBMITTED
03-119911	RELOCATABLE ADMIN/TOILET	REMOVED FROM CAMPUS
03-121803	MARQUEE SIGN	CERTIFICATION #1
03-122176	GIRLS LOCKER ROOM	CERTIFICATION #1
03-122632	SHADE SHELTERS	UNDER CONSTRUCTION
03-122678	CLASSROOM REMODEL	UNDER CONSTRUCTION
BUILDING D	FOOD SERVICE / MP	
A7692		NO DOCMENTATION ON DSA PRE-TRACKER
A68120		CLOSE LETTER #2
03-119235		CERTIFICATION #1



ENLARGED SITE PLAN 5
1"=30'-0"

1. FOR TYPICAL SYMBOLS AND ABBREVIATIONS, SEE SHEET G001.
2. PROTECT AND SAFEGUARD FROM DAMAGES ALL EXISTING CONSTRUCTION AND FINISHES TO REMAIN.
3. PROVIDE TEMPORARY 6' HIGH CHAIN LINK FENCE ENCLOSURES WITH LOCKABLE GATES AS REQUIRED FOR CONSTRUCTION ACCESS AT CONTRACTOR'S STAGING AREA AND AROUND ALL CONSTRUCTION SITES.
4. WHERE ASPHALT PAVING IS DAMAGED BY THE EXECUTION OF THIS CONTRACT, PATCH & REPAIR TO ORIGINAL OR BETTER CONDITION. WHERE (E) LAWNS ARE DAMAGED BY THE EXECUTION OF THIS CONTRACT, FILL, COMPACT, AND REPLANT AREA TO MATCH EXISTING TURF AREA.

SITE NOTES

(E) BUILDINGS NOT IN SCOPE OF WORK

(E) PORTION OF BUILDING "D" TO BE RENOVATED

(E) CHAINLINK FENCE TO REMAIN

EXISTING ACCESSIBLE "PATH OF TRAVEL" (P.O.T) PER A#03-119235

EXISTING 20' WIDE FIRE LANE PER APP 03-119235

EXISTING FIRE HYDRANT PER A#03-119235

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON THE PLAN IS A BARRIER FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP RESISTANT. CROSS SLOPE SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM A WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

THE P.O.T INDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS, AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE P.O.T WAS EXAMINED AND ANY ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

SITE PLAN LEGEND

RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504

LICENSED ARCHITECT RAND C. NICHOLL NO. C-19068 EXP. FEB 28, 2025 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT

11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
OVERALL SITE PLAN

SHEET NO:
A001

DSA **810**

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply.

Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy *PL 09-01: Fire Flow for Buildings*.

PROJECT INFORMATION	
School District/Owner:	Downey Unified School District
Project Name/School:	Sussman Middle School
Project Address:	12500 Birchdale Avenue, Downey, CA 90242

FIRE & LIFE SAFETY INFORMATION				
1.	Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data.)*	Yes ☐		No ☑
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☐		No ☑
3.	Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? *(If yes, indicate FHSZ classification below.)*	Yes ☐		No ☑
	Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/	Moderate ☐	High ☐	Very High ☐
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☐

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

CONDITION MEANS AND METHODS RESOLUTION		ALTERNATE ACCEPTED			
		Yes	No	N/A	NR
4.	Emergency vehicle access roadways do not meet CFC requirements.			✔	
4a.	**Acceptable Alternate:** Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property.				
5.	**Fire Hydrants:** Number and spacing does not meet CFC requirements.			✔	
5a.	**Acceptable Alternate:** Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.				
6.	**Fire Hydrants:** Water flow and pressure are less than CFC minimum.			✔	
6a.	**Acceptable Alternate:** The available flow and pressure is acceptable for providing fire suppression and protection of life and property.				
7.	Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.			✔	
7a.	**Acceptable Alternate:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.				

School District Acceptance of Acceptable Design Alternates

By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements, as indicated by one or more of the conditions indicated at items 4a, 5a, 6a or 7a, for providing fire and life safety protection of life and property.

Accepted by: Vince Madsen Title: Dir. Facilities and Construction

Signature: _____ Date: _____

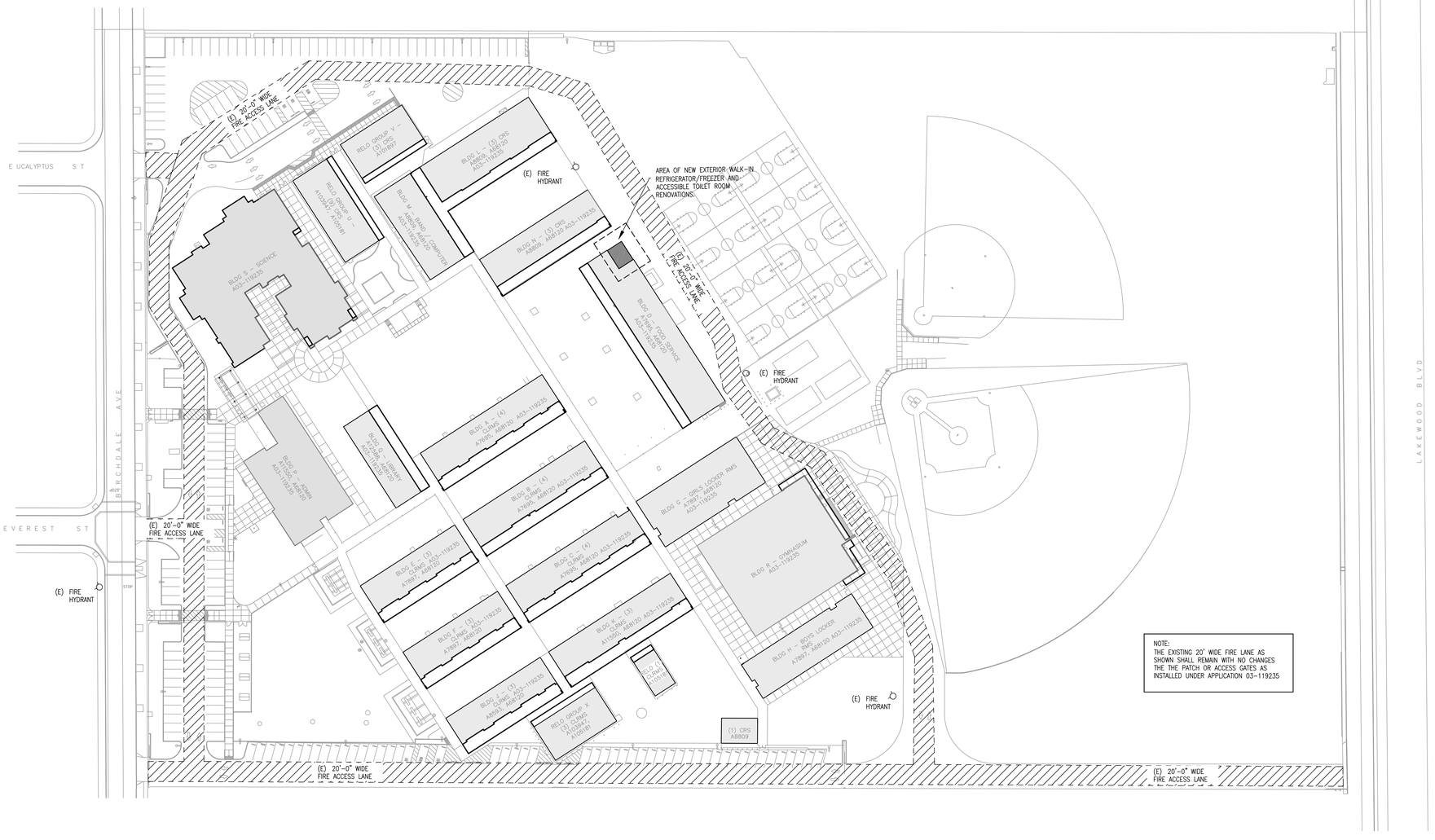
LOCAL FIRE AUTHORITY (LFA) INFORMATION	
LFA Agency Name:	
LFA Review Official:	
Title:	Work Phone:
Work Email:	

LFA Reviewer's Signature: _____ Date: _____

DSA 810 FORMS 1 NTS

2 NTS

3 NTS



FRE ACCESS SITE PLAN 5 1"=30'-0"

(E) BUILDINGS NOT IN SCOPE OF WORK

(E) PORTION OF BUILDING "D" TO BE RENOVATED

(E) CHAINLINK FENCE TO REMAIN

EXISTING ACCESSIBLE "PATH OF TRAVEL" (P.O.T) PER A#03-119235

EXISTING 20' WIDE FIRE LANE PER APP 03-119235

EXISTING FIRE HYDRANT PER A#03-119235

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SITE PLAN LEGEND

RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504

LICENSED ARCHITECT RAND C. NICHOLL NO. C-19066 EXP. FEB 28, 2021 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT

11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
FIRE ACCESS SITE PLAN

SHEET NO:
A002

RESTROOM NOTES

1. FOR TYPICAL SYMBOLS AND ABBREVIATIONS, SEE SHEET G001.
2. REFER TO DETAIL 3 ON THIS SHEET FOR STANDARD MOUNTING HEIGHTS/DIMENSIONS.
3. THERE SHALL BE NO SHARP OR ABRASIVE OBJECTS OR SURFACES UNDER LAVATORIES.
4. ALL DIMENSIONS ON THIS SHEET ARE TO FACE OF FINISH U.N.O

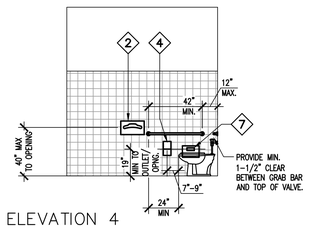
ACCESSORIES LEGEND

1. SOAP DISPENSER – 4" MAX PROJECTION (OFCI)
2. TOILET SEAT COVER DISPENSER (BOBRICK B-4221 AT ALL STALLS)
3. ADA COMPLIANT PAPER TOWEL DISPENSER–4" MAX. PROJECTION (BOBRICK B-2620)
4. TOILET PAPER DISPENSER, RECESSED (BOBRICK B-4388) (SHALL BE FITTED WITHOUT CUTTING WALL STUDS)
5. MIRROR (BOBRICK B-290)
6. GRAB BAR – BOBRICK B-5806, SEPARATE 36" AND 42" BAR SEE DETAIL 12/A102 FOR BACKING IN WALL
7. SANITARY NAPKIN DISPOSAL – SURFACE MOUNTED (BOBRICK B-270)

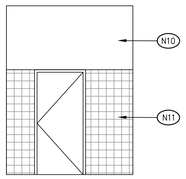
NOTES:
1. ALL DIMENSIONS ARE TO FACE OF FINISH U.N.O
2. FLOOR DRAIN W/ 1/4" MAX GRATE OPENING IN ALL DIRECTIONS, TYP.
3. 2% MAXIMUM SLOPE IN ALL DIRECTIONS IN RESTROOMS WITH FLOOR DRAINS, TYP.

ACCESSIBLE TURNAROUND SPACE MIN. 60" DIA. X 27"H CLEAR

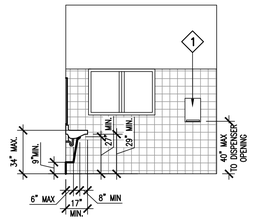
30"X48" CLEAR SPACE



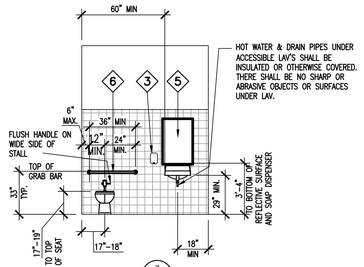
ELEVATION 4



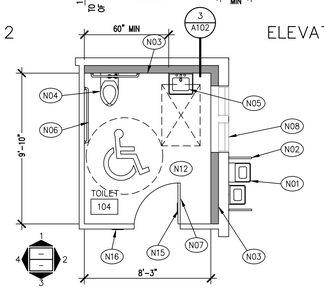
ELEVATION 3

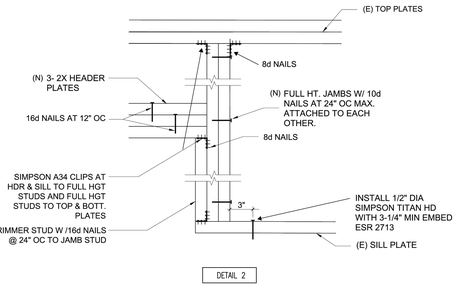


ELEVATION 2

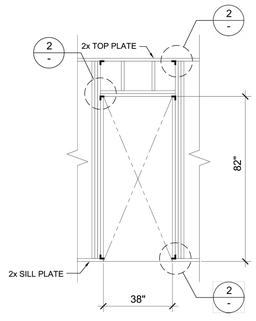


ELEVATION 1





DETAIL 2

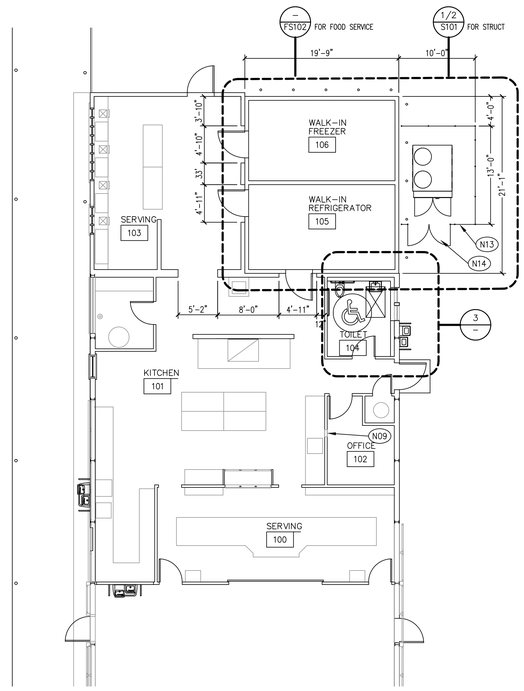


CARPENTRY

1. SCOPE OF WORK
CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND SERVICES TO INSTALL CARPENTRY

2. MATERIALS
LUMBER GRADE MARKED IN ACCORDANCE WITH "STANDARD GRADING AND DRESSING RULES NO. 17" OF WEST COAST LUMBER INSPECTION BUREAU OR "WESTERN LUMBING FOR GRADING RULES 2015 EDITION" OF WESTERN WOOD PRODUCTS ASSOCIATION. PLYWOOD GRADE MARKED IN ACCORDANCE WITH "PRODUCT STANDARD PS 1-09 FOR STRUCTURAL PLYWOOD" OF AMERICAN PLYWOOD ASSOCIATION, COMPLYING WITH CURRENT CBC REFERENCE STANDARDS

A. HEADERS: HEM FIR STUD GRADE OR BETTER
B. PLATES: HEM FIR STUD GRADE OR BETTER.
C. BLOCKING: HEM FIR STUD GRADE OR BETTER
D. TREATED LUMBER: SILLS AND LUMBER IN CONTACT WITH CONCRETE, MASONRY, ASPHALT OR EARTH-HEMLOCK FIR PRESSURE TREATED WITH PRESERVATIVE AS SPECIFIED IN 2303.1.9 OF CBC AWPA STANDARD U1 AND M4; 2X GRADE MEMBERS CUT ENDS DIPPED IN PRESERVATIVE (CUPONAL).
E. PLYWOOD ROOF DECKING: APA RATED, 3/4" C-D EXPOSURE 1, 48/24 SPAN RATING, PS 1-09
F. PLYWOOD FLOOR DECKING: 1 1/8" A.P.A. RATED STURD-1-FLOOR OR EQUAL. PS 1-09 T&G EDGES, 48" SPAN RATING
G. EXTERIOR SIDING/SHEATHING: APA TYPE 303, EXTERIOR, MDO 8" OC, SIDING, SHEATHING 1/2" CDX
H. STUDS AND POSTS: HEM FIR STUD GRADE
I. FASTENERS: ALL NAILS SHALL BE CORROSION RESISTANT PER CBC SECTION 2304.10.1.1 & 2304.10.5



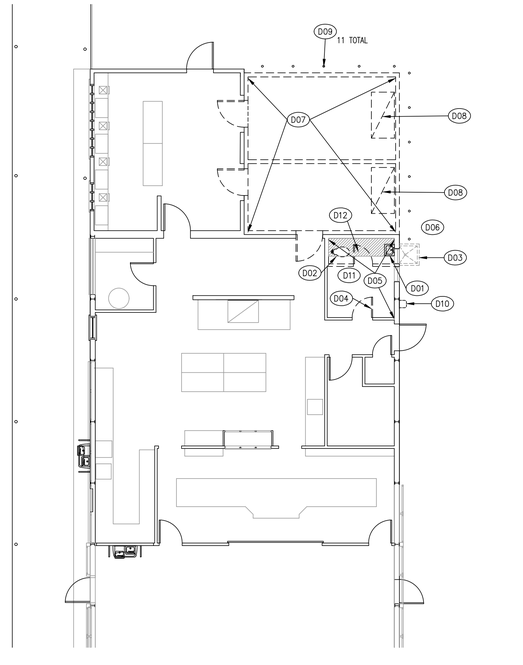


1/8"=1'-0"

RENOVATION PLAN – WALK-IN REFRIGERATOR & FREEZER 1

N01 NEW DRINKING FOUNTAIN. SEE DETAIL 13/A102. SEE PLUMBING DRAWINGS FOR ADDT'L INFORMATION.
N02 NEW DRINKING FOUNTAIN RAILING. SEE DETAIL 17/A102
N03 NEW FURRED INTERIOR WALL. SEE DETAIL 3/A102
N04 NEW TOILET. SEE PLUMBING DRAWINGS
N05 NEW SINK. SEE PLUMBING DRAWINGS
N06 NEW GRAB BARS. SEE DETAIL 12/A102
N07 NEW 3'-0" X 7'-0" WOOD DOOR AND HARDWARE. SEE DETAIL 4/– FOR FRAMING AND DETAILS 6,7,8/A102 FOR FINISHES
N08 (E) WINDOW TO REMAIN
N09 (E) ELECTRICAL PANEL
N10 (E) PLASTER WALL FINISH TO REMAIN. PAINT WHITE TO MATCH EXISTING ADJACENT SURFACES
N11 NEW TILE WALL SURFACE OVER 1/2" CEMENT WALL BOARD.
N12 NEW CERAMIC TILE FLOORING.
N13 NE CHAIN LINK FENCE ENCLOSURE AROUND THE CONDENSER. SEE DETAIL 9/A102
N14 NEW DOUBLE CHAIN LINK GATES TO CENTER ON CONDENSER. SEE DETAIL 11/A102
N15 NEW DOOR SIGNAGE PER DETAIL 20/A102
N16 NEW WALL SIGNAGE PER DETAIL 19/A102

RENOVATION KEYNOTES





1/8"=1'-0"

DEMOLITION PLAN – WALK-IN REFRIGERATOR & FREEZER 2

D01 REMOVE (E) SINK. SEE PLUMBING DRAWINGS FOR ADD'L INFO.
D02 REMOVE (E) TOILET. SEE PLUMBING DRAWINGS FOR ADD'L INFO.
D03 REMOVE (E) CAN WASH. SEE PLUMBING DRAWINGS FOR ADD'L INFO. PATCH ASPHALT SURFACE AT GRADE AND PLASTER WALL FINISH AS NECESSARY.
D04 REMOVE (E) DOOR AND FRAME.
D05 REMOVE (E) WALL FINISH FLOOR TO CEILING FOR INSTALLATION OF NEW FURRED WALL
D06 REMOVE PORTION OF (E) CONCRETE SLAB FOR NEW PLUMBING.
D07 REMOVE (E) WALK-IN REF & FREEZER INCLUDING THE 6" CONCRETE SLAB, WALL/CEILING PANELS AND ROOF MOUNTED CONDENSERS
D08 REMOVE (E) ROOF TOP MOUNTED CONDENSORS
D09 REMOVE (E) 4" HIGH STEEL BOLLARDS INCLUDING CONCRETE FOOTINGS
D10 REMOVE (E) DRINKING FOUNTAIN. SEE PLUMBING DRAWINGS FOR ADD'L INFO. PATCH PLASTER WALL SURFACE AS NECESSARY.
D11 REMOVE EXISTING FLOORING AND BASE FOR ENTIRE ROOM
D12 SAW CUT (E) CONCRETE SLAB AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND PLUMBING.

DEMOLITION KEYNOTES

XXX KEYNOTE NUMBER

ROOM 100 ROOM NUMBER

DETAIL NUMBER X / A8XX — DETAIL NUMBER / SHEET NUMBER

SECTION X / A5XX — SECTION NUMBER / SHEET NUMBER

INTERIOR ELEVATION 1 / 4 X A6XX 2 / 3 — ELEVATION NUMBER / SHEET NUMBER

EXISTING NON-RATED WOOD STUDS TO REMAIN

NEW FURRED WOOD STUD WALL. SEE DETAIL 3/A102

FLOOR PLAN SYMBOLS

RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504

LICENSED ARCHITECT RAND C. NICHOLL NO. C-19066 EXP. FEB 29, 2020 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

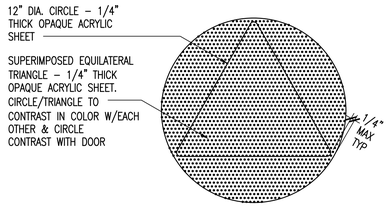
DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

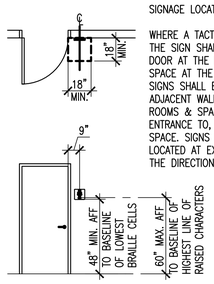
SHEET DESCRIPTION:
ENLARGED PLANS

SHEET NO:
A101



1. LOCATE PER DETAIL 18/–
2. SIGN COLOR SHALL DISTINCTLY CONTRAST WITH DOOR COLOR.

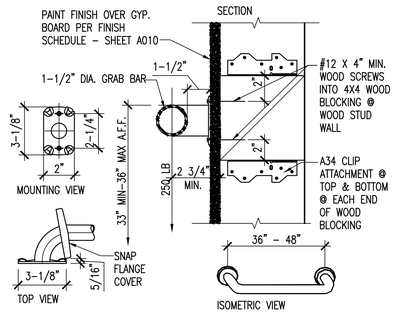
DOOR MTD TOILETROOM SIGNAGE 3" = 1'-0" | 20



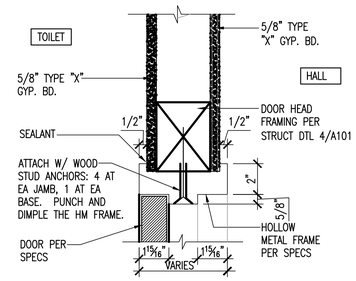
SIGNAGE LOCATION (2022 CBC 11B–703.4.2):

WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS IDENTIFYING PERMANENT ROOMS & SPACES SHALL BE LOCATED AT THE ENTRANCE TO, & OUTSIDE OF THE ROOM OR SPACE. SIGNS IDENTIFYING EXITS SHALL BE LOCATED AT EXIT DOORS WHEN APPROACHED IN THE DIRECTION OF EGRESS TRAVEL.

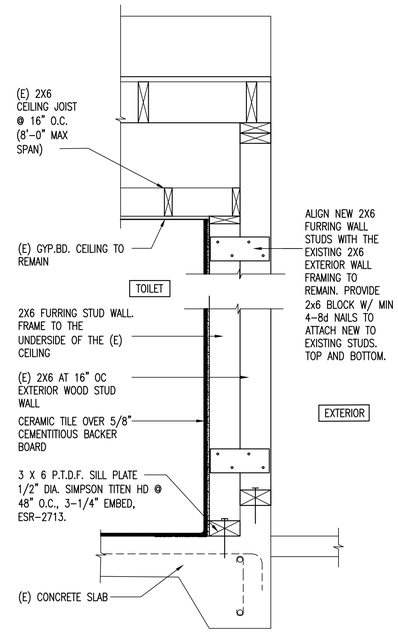
WALL MTD SIGNAGE 1/4" = 1'-0" | 16



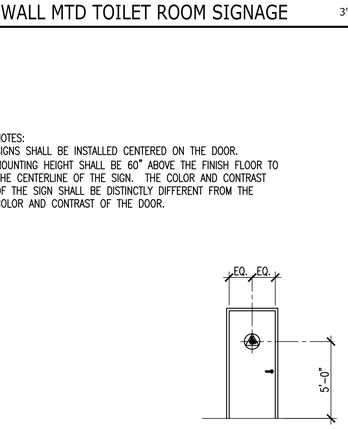
GRAB BAR MOUNTING 3" = 1'-0" | 12



INT DOOR HEADER AT (E) WALL 3" = 1'-0" | 8



FURRED WALL SECTION 1" = 1'-0" | 3



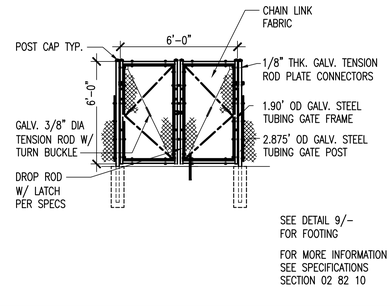
1. LOCATE PER DETAIL 16/–.
2. REFER TO SPEC. SECTION 10 14 23 FOR ADDITIONAL INFORMATION
3. FOR ADDITIONAL TEXT & BRAILLE NOTES SEE DETAIL 15/–

WALL MTD TOILET ROOM SIGNAGE 3" = 1'-0" | 19

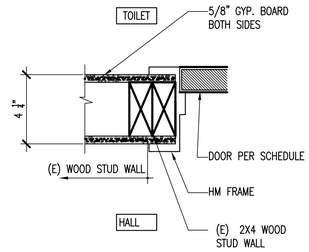
TEXT:
CBC 11B–703.2.4 PROPORTIONS: VISUAL CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I". STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15% MAX. OF THE HEIGHT OF THE CHARACTER. LETTERS AND NUMBERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS–SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 CONTRACTED BRAILLE. RAISED CHARACTERS OR SYMBOLS SHALL BE A MINIMUM OF 5/8" HIGH AND A MAXIMUM OF 2" HIGH. THE MINIMUM AND MAXIMUM HEIGHT IS MEASURED USING AN UPPERCASE "I". VERIFY TEXT WITH DOOR SCHEDULE.

BRAILLE SYMBOLS:
CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHEREVER BRAILLE SYMBOLS ARE REQUIRED BY THE CALIFORNIA BUILDING CODE. BRAILLE SHALL BE LOCATED A MINIMUM OF 3/8" & 1/2" MAX. PER CBC 11B–703.3.2 BELOW TACTILE CHARACTERS. BRAILLE DOTS SHALL BE 1/10" ON CENTERS IN EACH CELL.

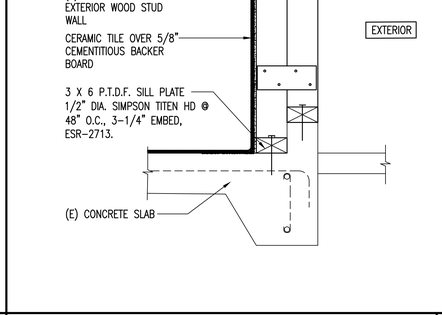
TEXT AND BRAILLE NOTES NTS | 15



CHAINLINK DBL GATES 1/4" = 1'-0" | 11



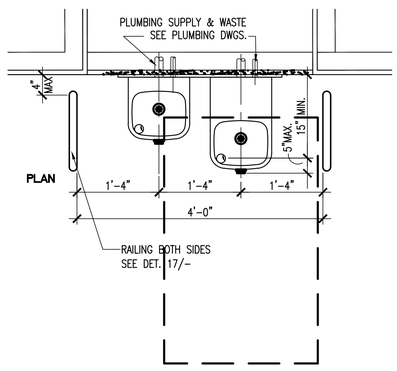
INT DOOR JAMB AT (E) WALL 3" = 1'-0" | 7

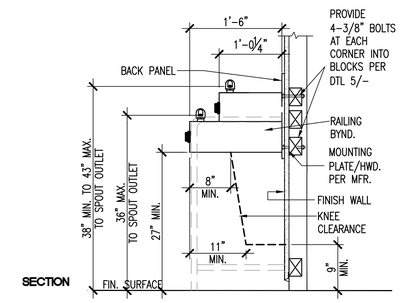


FURRED WALL ANCHORAGE 1/2" = 1'-0" | 1

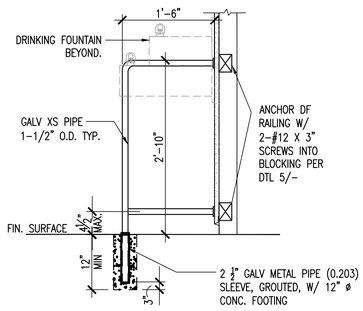
NOTES:
SIGNS SHALL BE INSTALLED CENTERED ON THE DOOR. MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN. THE COLOR AND CONTRAST OF THE SIGN SHALL BE DISTINCTLY DIFFERENT FROM THE COLOR AND CONTRAST OF THE DOOR.

DOOR MTD TOILET ROOM SIGNAGE 1/4" = 1'-0" | 18

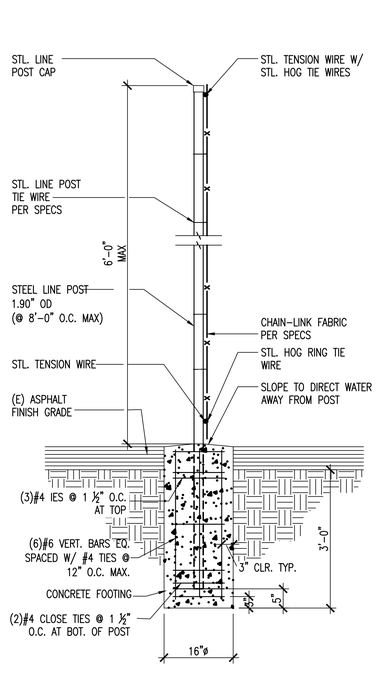




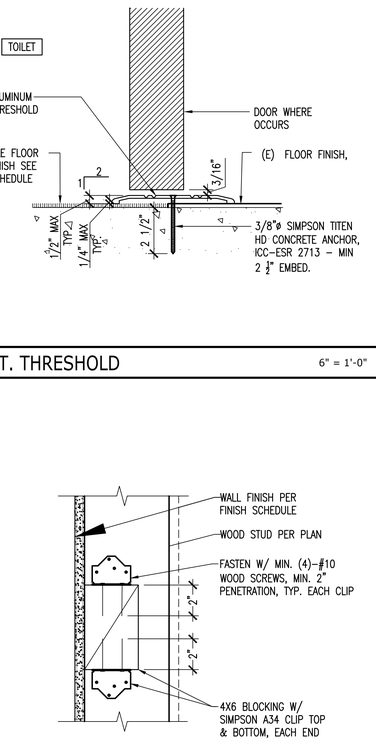
DRINKING FOUNTAIN 1" = 1'-0" | 13



DRINKING FOUNTAIN RAILING 1" = 1'-0" | 17

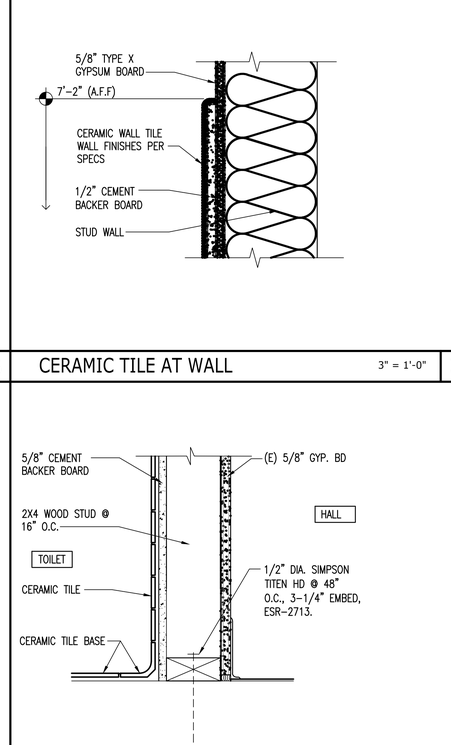


CHAINLINK FENCE FOOTING 3/4" = 1'-0" | 9



WALL BLOCKING ANCHORAGE 1/2" = 1'-0" | 5

INT. THRESHOLD 6" = 1'-0" | 6



CERAMIC TILE AT WALL 3" = 1'-0" | 2

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714.915.4504

LICENSED ARCHITECT RAND C. NICHOLL NO. C–19066 EXP. FEB 28, 2025 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

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SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
DETAILS

SHEET NO:
A102

LIST OF ABBREVIATIONS

ADD'L.	ADDITIONAL
ALT.	ALTERNATE
ACI	AMERICAN CONCRETE INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
A.B.	ANCHOR BOLT(S)
APPROX.	APPROXIMATELY
ARCH.	ARCHITECT / ARCHITECTURAL
@	AT
B. PL.	BASE PLATE
BM.	BEAM
BRG.	BEARING
BTWN.	BETWEEN
BLK.	BLOCK
BLKG.	BLOCKING
B.E.	BOTH ENDS
BOT. OR BOTT.	BOTTOM
B.N.	BOUNDARY NAILS
BLDG.	BUILDING
C	CAMBER
CBC	CALIFORNIA BUILDING CODE
CIP	CAST IN PLACE
CLG.	CEILING
CJ	CEILING JOIST OR CONSTRUCTION JOINT OR CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION WELD
℄	CENTER LINE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
COND.	CONDITION
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT'D	CONTINUED
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
CSK.	COUNTERSINK
DL	DEAD LOAD
DP.	DEEP
DEMO.	DEMOLISH
DTL. OR DET.	DETAIL
DIAG.	DIAGONAL
DIA. OR ø	DIAMETER
DIM.	DIMENSION
DO	DITTO
DBL.	DOUBLE
D.F.	DOUGLAS FIR
DWL.	DOWEL
DN.	DOWN
DWG.	DRAWING
EA.	EACH
E.F.	EACH FACE
E.S.	EACH SIDE
E.W.	EACH WAY
E.N.	EDGE NAIL(S)
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EMBED.	EMBEDMENT
ENG.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXCAV.	EXCAVATION
(E)	EXISTING
EXP.	EXPANSION
EJ	EXPANSION JOINT
ES	EVALUATION SERVICE
ESR	EVALUATION SERVICE REPORT
EXT.	EXTERIOR
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD OR FACE OF SLAB
F.S.	FAR SIDE
FIN.	FINISH
F.F.	FINISHED FLOOR
FHWS	FLAT HEAD WOOD SCREW
FLR.	FLOOR
FD	FLOOR DRAIN
FTG.	FOOTING
FNDN.	FOUNDATION
FRMG.	FRAMING
GALV.	GALVANIZE
GA.	GAUGE
GLU-LAM	GLUED LAMINATED
GLB	GLUED LAMINATED BEAM
GR.	GRADE
HGR.	HANGER
HR	HARDROCK
HDR.	HEADER
HT.	HEIGHT
HD	HOLD DOWN
HSS	HOLLOW STRUCTURAL SECTION
HORIZ.	HORIZONTAL
INFO.	INFORMATION
I.D.	INSIDE DIAMETER
INT.	INTERIOR
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
INV.	INVERT
JST.	JOIST
KP	KING POST
KSI	KIPS PER SQUARE INCH
LAM.	LAMINATED
LDGR.	LEDGER
LT. WT. OR LW	LIGHT WEIGHT
LL	LIVE LOAD
LG.	LONG OR LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO-HY	LOW HYDROGEN
M.B.	MACHINE BOLT(S)
MFR.	MANUFACTURER
MAS.	MASONRY
M.O.	MASONRY OPENING
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MU	MECHANICAL UNIT
N.F.	NEAR FACE
N.S.	NEAR SIDE
NSA	NELSON STUD ANCHOR
(N)	NEW
NIC.	NOT IN CONTRACT
NTS.	NOT TO SCALE
NO. OR #	NUMBER
O.C.	ON CENTER
OPNG.	OPENING
OPP.	OPPOSITE
O.H.	OPPOSITE HAND
O.D.	OUTSIDE DIAMETER
PHWS	PAN HEAD WOOD SCREW
P.J.	PANEL JOINT
d	PENNY
PIL.	PILASTER
PL. OR ℙ	PLATE (STEEL OR WOOD)
PLY.	PLYWOOD
PWJ	PLYWOOD WEB JOIST
PCF	POUNDS PER CUBIC FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PL	PROPERTY LINE
RAD.	RADIUS
RFTR.	RAFTER
REF.	REFERENCE
REINF.	REINFORCING
REQ'D	REQUIRED
REQMT.	REQUIREMENT
RF.	ROOF
R.D.	ROOF DRAIN

LIST OF ABBREVIATIONS (CONT'D)

RO.	ROUGH
R.O.	ROUGH OPENING
SCHED.	SCHEDULE
SEC.	SECTION
SEL.	SELECT
SEP.	SEPARATION
SFRS.	STRUCTURAL FORCE RESISTING SYSTEM
SHTG.	SHEATHING
SHT.	SHEET
S.M.	SHEET METAL
SMS	SHEET METAL SCREWS
SIM.	SIMILAR
SIMP.	SIMPSON
SPCG.	SPACING
SPECS.	SPECIFICATION
SQ.	SQUARE
STGR.	STAGGER
S.S.	STAINLESS STEEL
SPC	STANDARD PIPE COLUMN
STD.	STANDARD
STL.	STEEL
STIFF.	STIFFENER
STIRR.	STIRRUP
STRUCT.	STRUCTURAL
SYM.	SYMMETRICAL
TSG	TAPERED STEEL GIRDER
THK.	THICK
K OR KIP	1,000 POUNDS
THRU	THROUGH
TN	TOE NAIL
T&G	TONGUE AND GROOVE
T&B	TOP AND BOTTOM
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.S.	TOP OF STEEL OR TOP OF SHEATHING
T.O.W.	TOP OF WALL
TL	TOTAL LOAD
TS	TUBE STEEL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
VERT.	VERTICAL
WT.	WEIGHT
WWF	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT
WD.	WOOD
WJ	WOOD-I-JOIST
WP	WORK POINT
W.S.	WOOD SCREW

GENERAL

1. THESE STRUCTURAL DRAWINGS AND SPECIFICATIONS, INCLUDING ANY ADDENDA (COLLECTIVELY "THE PLANS") INCORPORATE ALL LEGAL AND INDUSTRY REQUIREMENTS AND STANDARDS INCLUDING WITHOUT LIMITATION THE FOLLOWING:
   - THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 1 (CALIFORNIA ADMINISTRATIVE CODE), 2022 EDITION.
   - THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CALIFORNIA BUILDING CODE), 2022 EDITION.
   - OTHER REGULATING AGENCIES WHICH MAY HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
   - THE FUNCTIONALITY STANDARDS SET FORTH IN TITLE 7 OF THE CALIFORNIA CIVIL CODE (THE "RIGHT TO REPAIR ACT").
   - THE MANUFACTURER'S REQUIREMENTS OR RECOMMENDATIONS FOR ANY INCORPORATED PRODUCTS.
   - THE MOST CURRENT APPROVED ISSUES OF ANY NOTED SPECIFICATIONS, CODES AND STANDARDS, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE.
2. THE PLANS REPRESENT ONLY THE FINISHED STRUCTURE, AND THEY ARE NOT INTENDED TO INDICATE OR REQUIRE ANY CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES. IN PARTICULAR AND WITHOUT LIMITATION, THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL EXCAVATION, DEMOLITION, SHORING AND ERECTION PROCEDURES AND FOR ANY AND ALL SAFETY PROGRAMS AND PRECAUTIONS.
3. IN USING THE PLANS FOR BIDDING OR CONSTRUCTION PURPOSES, THE CONTRACTOR IS REQUIRED TO REVIEW ALL OF THE PROJECT'S CONSTRUCTION DOCUMENTS AS A WHOLE IN ORDER TO IDENTIFY ALL REQUIREMENTS THAT DIRECTLY OR INDIRECTLY AFFECT ITS PORTION OF THE STRUCTURAL WORK, EVEN REQUIREMENTS LOCATED IN SECTIONS DESIGNATED AS APPLICABLE TO OTHER TRADES. IN CASE OF CONFLICTS, THE CONTRACTOR SHALL EITHER OBTAIN DIRECTION FROM AN APPROPRIATE OWNER REPRESENTATIVE OR OTHERWISE APPLY THE MORE STRINGENT REQUIREMENT.
4. IN INTERPRETING THE PLANS, THE FOLLOWING GENERAL RULES APPLY:
   - WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
   - SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
   - WORK NOT PARTICULARLY SHOWN OR SPECIFIED SHALL BE THE SAME AS SIMILAR PARTS THAT ARE SHOWN OR SPECIFIED.
   - SCALED DIMENSIONS AND GRAPHICALLY SHOWN LOCATIONS ARE TO BE CONSIDERED ONLY APPROXIMATE.
5. IN IMPLEMENTING THE PLANS, THE FOLLOWING GENERAL RULES APPLY:
   - BECAUSE THE PLANS ARE INTENDED TO SET FORTH THE REQUIREMENTS FOR CONSTRUCTION IN ONLY AN INDUSTRY-STANDARD LEVEL OF QUALITY AND DETAIL, AND THEREFORE ARE INTENDED TO BE SUPPLEMENTED BY APPROPRIATE REQUESTS FOR CLARIFICATION AND INFORMATION, ERRORS AND OMISSIONS ARE TO BE EXPECTED AND ANTICIPATED; AND THE CONTRACTOR IS REQUIRED TO CAREFULLY REVIEW THE PLANS FOR ERRORS AND OMISSIONS AND TO BRING THESE ERRORS AND OMISSIONS TO THE ATTENTION OF AN APPROPRIATE OWNER REPRESENTATIVE IN A TIMELY MANNER AND ASSUMES THE RISK OF THE CONSEQUENCES OF FAILING TO DO SO BEFORE BIDDING OR OTHERWISE PROCEEDING.
   - THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION, AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES.
6. SUBMITTALS WILL BE REVIEWED BY THE STRUCTURAL ENGINEER, IF AT ALL, ONLY PURSUANT TO THE INDUSTRY-STANDARD PROTOCOL SET FORTH IN AIA DOCUMENT A201, AND IN NO EVENT WILL THE SUBMITTAL REVIEW PROCESS RELIEVE OR LESSEN THE SUBMITTING CONTRACTOR'S RESPONSIBILITY FOR AN INAPPROPRIATE SUBMITTAL.
7. IN NO EVENT WILL ANY SITE VISITS BY THE STRUCTURAL ENGINEER CONCERN CONSTRUCTION MEANS AND METHODS OR CONSTRUCTION SAFETY, AND ALL SUCH MATTERS SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. COPIES OF THE PLANS PROVIDED IN ANY ELECTRONIC FORM ARE SUBJECT TO THE SAME PROVISIONS AS THE OTHER INSTRUMENTS OF SERVICE PREPARED BY OR ON BEHALF OF STRUCTURAL ENGINEER FOR THE PROJECT, INCLUDING WITHOUT LIMITATION THE ENGINEER'S COMMON LAW, STATUTORY OR OTHER RESERVED RIGHTS, INCLUDING COPYRIGHTS. A RECIPIENT IS GRANTED AT MOST A TRANSFERABLE NONEXCLUSIVE LICENSE TO REUSE THE PLANS SOLELY FOR PROJECT PURPOSES; AND NO RECIPIENT IS AUTHORIZED TO USE OR TO ALLOW THE USE OF ALL OR ANY PORTION OF THESE PLANS FOR ANY OTHER PURPOSE, AND ANY USE FOR ANY OTHER PURPOSE WOULD CONSTITUTE ACTIONABLE PLAGIARISM. STRUCTURAL ENGINEER PROVIDES DOCUMENTS IN AN ELECTRONIC FORM ONLY IN ITS STANDARD FORMATS AND CONVENTIONS AND WITH NO GUARANTEE OF COMPATIBILITY WITH ANY RECIPIENT'S SOFTWARE OR HARDWARE, AND ANY USE WITH OR CONVERSION TO OTHER FORMATS OR CONVENTIONS, OR THE USE WITH ANY PARTICULAR SOFTWARE OR HARDWARE, IS AT THE RECIPIENT'S SOLE RISK.

PROJECT DESIGN CRITERIA

1. BASIC DESIGN LIVE LOADS:

   ROOF 20 PSF (REDUCIBLE)

2. WIND LOADS

   RISK CATEGORY: III
   EXPOSURE CATEGORY: C
   BASIC DESIGN WIND SPEED (3-SECOND GUST), V = 101 MPH
   ALLOWABLE STRESS DESIGN WIND SPEED, V_{ASD} = 79 MPH
   VELOCITY PRESSURE EXPOSURE COEFFICIENT, K_z = 0.85 (0-15 FT)
   TOPOGRAPHIC FACTOR, K_{zt} = 1.0
   WIND DIRECTIONALITY FACTOR, K_d = 0.85
   GROUND ELEVATION FACTOR, Ke = 1.00
   GUST EFFECT FACTOR, G = 0.85

   A. MWFRS - DIRECTIONAL PROCEDURE (ASCE 7-16, CH. 27)

   $q_z = 0.00256\ K_z\ K_{zt}\ K_d\ K_e\ V^2 = 18.80$ PSF

   $P = qGC_p - q_i(GC_{pi})$

   GUST EFFECT FACTOR, G = 0.85
   EXTERNAL PRESSURE COEFFICIENT, C_p = FIG. 27.3-1
   INTERNAL PRESSURE COEFFICIENT, (GC_{pi}) = TABLE 26.13-1

   B. COMPONENTS & CLADDING (ASCE 7-16, CH. 30)

   $q_h = 0.00256\ K_z\ K_{zt}\ K_d\ K_e\ V^2 = 18.80$ PSF

   $P = q_h\ [(GC_p) - (GC_{pi})]$

   EXTERNAL PRESSURE COEFFICIENT, (C_{pn}) = [FIG. 30.3-1 THRU 30.3-7]
   INTERNAL PRESSURE COEFFICIENT, (GC_{pi}) = TABLE 26.13-1

3. EARTHQUAKE LOADS

   SEISMIC DESIGN CRITERIA

   S_s = 1.659
   S_1 = 0.595
   SITE CLASS: D
   F_a = 1.0
   F_v = 1.7
   S_{DS} = 1.327
   S_{D1} = 0.674
   RISK CATEGORY: III
   SEISMIC DESIGN CATEGORY: D

   SEISMIC DESIGN REQUIREMENTS

   $$F_p = \frac{0.4(a_p)(S_{DS})(I_p)}{R_p}\left(1+2\frac{z}{h}\right)W_p$$

4. FOUNDATION DESIGN PARAMETERS

   PRESUMPTIVE SOIL LOAD-BEARING VALUES (CBC-22 TABLE 1806A.2)

   VERTICAL BEARING PRESSURE: 1500 PSF
   LATERAL BEARING PRESSURE: 100 PSF/FT

DIMENSIONS

1. DIMENSIONS SHALL BE DEFINED TO INCLUDE BOTH HORIZONTAL DIMENSIONS AND VERTICAL DIMENSIONS (ELEVATIONS).
2. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.
3. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT NOTED ON STRUCTURAL DRAWINGS.
4. SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND/OR ROOF ELEVATIONS.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES.

SUBMITTALS

1. SUBMITTALS, INCLUDING SHOP DRAWINGS AND CONCRETE MIX DESIGNS, REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THE ITEMS.
2. A SCHEDULE FOR SUBMITTAL OF SHOP DRAWINGS SHALL BE PREPARED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO THE START OF FABRICATION. THE SCHEDULE SHALL PROPORTION THE QUANTITY OF SHOP DRAWINGS TO BE REVIEWED IN EACH SUBMITTAL TO ALLOW SUFFICIENT TIME, AS DEEMED REASONABLE IN THE PROFESSIONAL JUDGEMENT OF THE ARCHITECT AND STRUCTURAL ENGINEER, TO PERMIT ADEQUATE REVIEW.
3. SHOP DRAWINGS SHALL INDICATE THE DATE OR REVISION OF DRAWING(S) FROM WHICH THE DRAWINGS WERE PREPARED. SUBMITTALS THAT DO NOT IDENTIFY THE LATEST DATE OR REVISION OF DRAWING(S) WILL BE RETURNED WITHOUT REVIEW. ONLY SHOP DRAWINGS THAT ARE COMPLETE WILL BE ACCEPTED FOR REVIEW.
4. IF, AFTER REVIEW, THE SHOP DRAWINGS MUST BE REVISED AND RESUBMITTED, THE SHOP DRAWINGS SHALL IDENTIFY EACH REVISION AND/OR ADDITION BY CLOUDING OR OTHER MEANS TO ASSURE PROPER REVIEW.
5. SUBMITTALS WILL NOT BE ACCEPTED DIRECTLY FROM SUBCONTRACTORS. SUBMITTALS WILL BE ACCEPTED FROM THE GENERAL CONTRACTOR ONLY AFTER BEING REVIEWED AND SIGNED BY THE GENERAL CONTRACTOR, INDICATING COMPLIANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. SUBMITTALS NOT COMPLYING WITH THE REQUIREMENTS NOTED ABOVE OR IN THE SPECIFICATIONS WILL BE RETURNED WITHOUT REVIEW.

DEMOLITION

1. ALL DEMOLITION SHALL BE CARRIED ON IN SUCH A WAY AS NOT TO DAMAGE EXISTING ELEMENTS, WHICH ARE TO REMAIN IN THE FINISHED STRUCTURE.
2. ALL ELEMENTS OF THE STRUCTURE, WHICH ARE TO REMAIN, AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDITIONAL COST. EXISTING ELEMENTS SHALL BE PROTECTED TO THE FULLEST EXTENT POSSIBLE, IN ORDER TO MITIGATE DAMAGE.
3. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF ALL EXISTING ELEMENTS THAT ARE NECESSARY FOR THE INSTALLATION OF ALL NEW WORK.
4. DO NOT CORE OR CUT NEW OPENINGS IN EXISTING CONCRETE OR MASONRY WITHOUT SPECIFIC APPROVAL OF THE STRUCUTRAL ENGINEER. SUBMIT DIMENSIONED LAYOUT OF ALL PROPOSED NEW OPENINGS TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CORING OR CUTTING OPENINGS. CONTRACTOR, AT HIS OWN EXPENSE, SHALL USE NON-DESTRUCTIVE METHODS TO LOCATE EXISTING REINFORCING. EXISTING REINFORCING SHALL NOT BE CUT WITHOUT SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER.

CONCRETE

1. ALL PORTIONS OF WORK PERTAINING TO CONCRETE CONSTRUCTION SHALL CONFORM TO TITLE 24, PART 2, CHAPTER 19A.
2. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY. MIX DESIGNS SHALL CONFORM TO ACI 318, SEC. 26.4, CBC SEC.1903A AND 1904A. MIX DESIGNS SHALL INCORPORATE THE FOLLOWING CRITERIA:
   - 145 PCF WITH A 28 DAY MINIMUM STRENGTH, f'c = 4500 PSI.
   - MINIMUM OF 5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. MAXIMUM OF 7 SACKS OF CEMENT PER YARD OF CONCRETE.
   - MAXIMUM WATER/CEMENT RATIO (BY WEIGHT) OF CONCRETE IN CONTACT WITH SOIL SHALL BE 0.45.
   - MAXIMUM SLUMP SHALL NOT EXCEED 3" ± 1". SLUMP LIMITATION NOTED SHALL APPLY TO CONCRETE MIX PRIOR TO THE ADDITION OF ANY WATER-REDUCING ADMIXTURES OR SUPER-PLASTICIZERS. MAXIMUM SLUMP MAY BE INCREASED TO 5 +/- 1" FOR MIX INCLUDING WATER-REDUCING ADMIXTURES OR SUPER-PLASTICIZERS.
   - CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CHLORIDE(S) SHALL NOT BE USED.
3. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE V.
4. AGGREGATE FOR CONCRETE SHALL CONFORM TO ASTM C-33. COMBINED AGGREGATE GRADATION OF ⅜" MAXIMUM (PEA GRAVEL) SHALL NOT BE USED.
5. VOLUME OF COARSE AGGREGATE SHALL NOT EXCEED 9.0 CUBIC FEET PER CUBIC YARD OF CONCRETE.
6. READY MIXED CONCRETE SHALL CONFORM TO ASTM C-94.
7. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI 304. CLEAN AND ROUGHEN TO ¼" AMPLITUDE ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.
8. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE SECURED IN POSITION PRIOR TO PLACING CONCRETE.
9. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3"

   CONCRETE EXPOSED TO EARTH OR WEATHER: ..... 1½"

   CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
   SLABS, WALLS, JOISTS: ..... ¾"
10. CONDUITS OR PIPES SHALL NOT BE EMBEDDED WITHIN A SLAB, WALL, BEAM, OR COLUMN, UNLESS SPECIFICALLY DETAILED.
11. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL MOLDS, GROOVES, REVEALS, ORNAMENTS AND GROUNDS TO BE CAST IN CONCRETE.
12. DRYPACK WHERE NOTED ON DRAWINGS SHALL CONSIST OF 1 PART PORTLAND CEMENT AND 2½ PARTS OF FINE AGGREGATE CONFORMING TO ASTM C-33 WITH ENOUGH WATER TO FORM A BALL WHEN SQUEEZED IN THE HAND. THE SPACE BETWEEN TWO SURFACES REQUIRING DRYPACK SHALL BE PACKED WITH THE DRYPACK MATERIAL BY TAMPING OR RAMMING WITH A BAR OR ROD UNTIL THE VOIDS ARE COMPLETELY FILLED.
13. NON-SHRINK GROUT WHERE NOTED ON DRAWINGS SHALL BE A PRE-MIXED COMPOUND CONSISTING OF NON-METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 8,000 PSI AT 28 DAYS. WHERE APPLICATION THICKNESS EXCEEDS MANUFACTURER'S LIMITATIONS, EXTEND WITH ⅜" (GRAVEL) AGGREGATE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
14. BATCH PLANT INSPECTION MAY BE REDUCED TO PERIODIC SUBJECT TO THE REQUIREMENTS OF CBC SEC. 1705A.3.3.2.

REINFORCING STEEL

1. ALL PORTIONS OF WORK PERTAINING TO FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL CONFORM TO TITLE 24, PART 2, CHAPTER 19A.
2. REINFORCING BARS SHALL CONFORM TO ASTM A-615 GRADE 60, EXCEPT #3 BARS MAY BE GRADE 40.
3. WELDING OF REINFORCEMENT IS NOT PERMITTED.
4. ALL REINFORCING BAR BENDS SHALL BE MADE COLD. ALL #5 OR LARGER REINFORCING BARS SHALL NOT BE RE-BENT.
5. REINFORCING SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS.

STRUCTURAL STEEL AND MISCELLANEOUS METAL

1. ALL PORTIONS OF WORK PERTAINING TO STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO TITLE 24, PART 2, CHAPTER 22A.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-992, UNLESS NOTED OTHERWISE.
3. ROUND HOLLOW STRUCTURAL SECTION (HSS) SHALL CONFORM TO ASTM A-500, GRADE B.
4. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A-500, GRADE B.
5. CHANNELS, ANGLES AND PLATES SHALL CONFORM TO ASTM A-36, UNLESS NOTED OTHERWISE.
6. ALL BOLTS SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE:
   - ANCHOR BOLTS: ASTM F1554 (GR. 36)
   - TYPICAL STEEL CONNECTIONS: ASTM F3125 GR. A325N (NON-SLIP-CRITICAL)
   - MOMENT AND DRAG CONNECTIONS: ASTM F3125 GR. A325SC (SLIP-CRITICAL)
   - MISCELLANEOUS CONNECTIONS NOT NOTED OTHERWISE: ASTM A-307
7. ANCHOR BOLTS SHALL BE HEX HEADED. BENT BAR ANCHORS SHALL NOT BE USED.
8. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
9. ALL WELDING SHALL CONFORM TO THE STRUCTURAL WELDING CODE - STEEL, AWS D1.1 AND STRUCTURAL WELDING CODE SEISMIC SUPPLEMENT AWS D1.8, BY THE AMERICAN WELDING SOCIETY. WELDING RODS SHALL BE E70XX.
10. THE FILLER METAL FOR ALL WELDING SHALL HAVE A NOTCH TOUGHNESS OF NOT LESS THAN 20 FT-LBS AT 0 DEGREES F, AS MEASURED BY A STANDARD CHARPY V-NOTCH TEST, ASTM E23, IN ACCORDANCE WITH THE APPLICABLE FILLER METAL SPECIFICATION REFERENCED IN AWS D1.1 AND SEISMIC SUPPLEMENT AWS D1.8.
11. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
12. ALL WELDS NOT SPECIFIED SHALL BE CONTINUOUS FILLET WELDS. SIZE OF WELDS SHALL BE BASED ON AWS D1.1 FOR THICKER PART JOINED.
13. BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE. BOLT HOLES AT COLUMN BASEPLATES MAY BE 3/16" MAXIMUM LARGER IN DIAMETER THAN NOMINAL SIZE OF ANCHOR BOLT USED, UNLESS NOTED OTHERWISE.
14. DO NOT PAINT STRUCTURAL STEEL SURFACES THAT ARE TO RECEIVE SPRAY-APPLIED FIREPROOFING OR TO BE ENCASED IN CONCRETE OR MASONRY.
15. STRUCTURAL STEEL SHALL BE DELIVERED TO THE JOB SITE FREE OF EXCESSIVE RUST, MILL SCALE, GREASE, ETC.
16. OPENINGS SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED.

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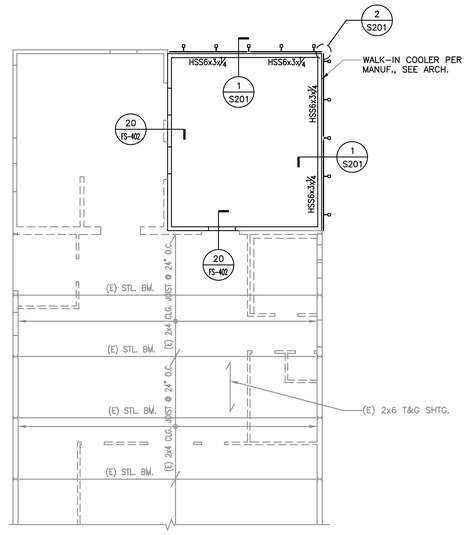
GENERAL NOTES

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Date: 12/08/2023
Job: 2204
Scale:
Drawn:

S001

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XREF:



ROOF FRAMING PLAN NOTES

1. SEE SHEETS S001 FOR GENERAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR ALL TOP OF SHEATHING AND TOP OF WALL/PARAPET ELEVATIONS.
3. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.

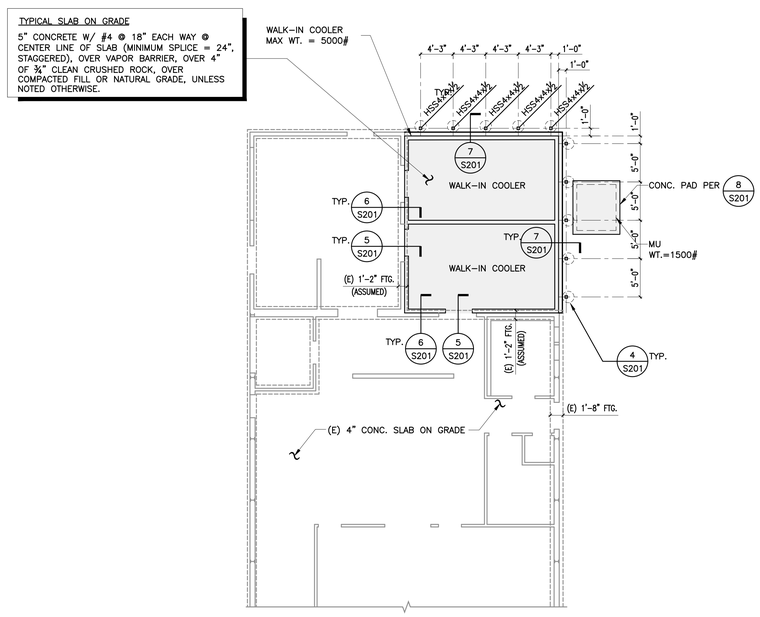
LEGEND

: INDICATES SPAN OF (E) JOISTS.

: INDICATES EXTENT OF (E) JOISTS.



PARTIAL ROOF FRAMING PLAN | 1 | 1/8"=1'-0"



FOUNDATION PLAN NOTES

1. SEE SHEETS S001 FOR GENERAL NOTES.
2. SEE SPECIFICATIONS FOR ALL SITE AND SUBGRADE PREPARATIONS.
3. SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR FINISH FLOOR ELEVATIONS.
4. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ALL EXTERIOR CONCRETE PAVING, SLABS, BASES, CURBS, SITE WALLS, ETC.
5. FOR ANY DIMENSIONAL INFORMATION NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.
6. SEE PLANS AND ARCHITECTURAL DRAWINGS FOR DEPRESSIONS AND/OR SLOPES IN CONCRETE SLABS.
7. ALL DIMENSIONS SHOWN ARE FROM FACE OF STUD, CENTER LINE OF COLUMN, OR CENTER LINE OF WALL, UNLESS NOTED OTHERWISE. ALL COLUMNS ARE CENTERED IN STUD WALL, UNLESS NOTED OTHERWISE.
8. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS IN BEARING AND NON-BEARING WALLS.
9. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF INTERIOR NON-BEARING PARTITIONS. INTERIOR NON-BEARING PARTITION WALLS THAT DO NOT REQUIRE CONCRETE CURBS ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
10. SEE ARCHITECTURAL, PLUMBING, MECHANICAL, ELECTRICAL, AND KITCHEN DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS AND SLAB PENETRATIONS.
11. FOR TYPICAL SLAB JOINTS, SEE DETAIL 5/S201.

LEGEND

HSS3x3x¼ : INDICATES STEEL OR WOOD COLUMN SIZE. SEE DETAIL 2/S201 FOR STEEL COLUMN BASE PLATE, U.N.O.



PARTIAL FOUNDATION PLAN | 1 | 1/8"=1'-0"

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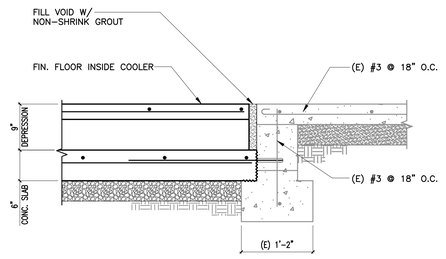
PARTIAL FOUNDATION AND ROOF FRAMING PLAN

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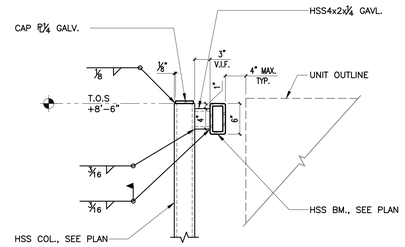
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FOR ADDITIONAL INFORMATION
SEE DETAIL 6 / —

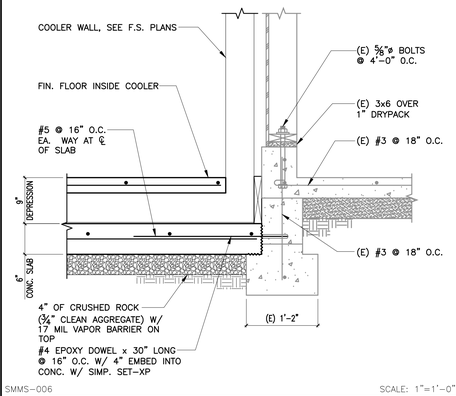
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17 | DETAIL | 5



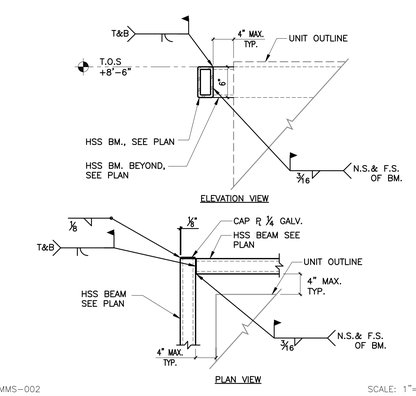
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13 | DETAIL | 1



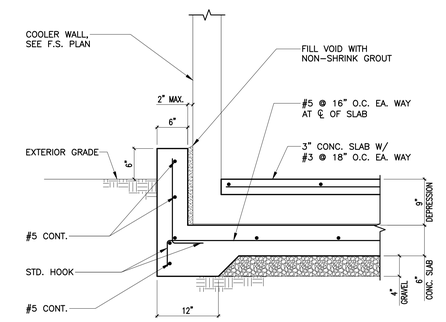
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18 | DETAIL | 6



SMMS-002 SCALE: 1"=1'-0"

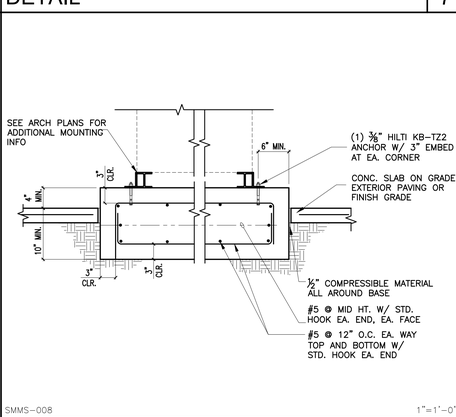
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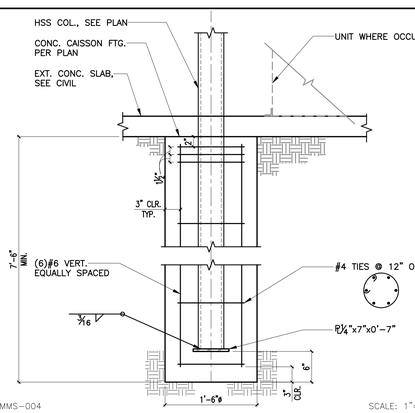
19 | DETAIL | 7

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SMMS-008 1"=1'-0"

20 | DETAIL | 8



SMMS-004 SCALE: 1"=1'-0"

16 | DETAIL | 4

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PARTIAL FOUNDATION AND ROOF FRAMING PLAN

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GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR (EC) SHALL INCLUDE AND PROVIDE IN BID ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE AND OPERATIONAL INSTALLATION OF ALL ELECTRICAL SYSTEMS.

2. EC SHALL COORDINATE AND OBTAIN ALL APPROVALS, PERMITS, AND DOCUMENTS FROM REGULATORY AGENCIES AND UTILITY COMPANIES.

3. ALL CONDUIT RACEWAY SYSTEMS ARE TO BE INSTALLED AS FOLLOWS:
   a. RIGID GALVANIZED STEEL IS TO BE INSTALLED IN ALL AREAS WHICH ARE EXPOSED TO WEATHER AND/OR PHYSICAL DAMAGE.
   b. FLEXIBLE METALLIC CONDUIT I S PERMITTED FOR SHORT CONNECTIONS TO LIGHT FIXTURES (6'-0" MAX). FLEXIBLE CONDUIT SHALL ALSO BE INSTALLED FOR EQUIPMENT REQUIRING VIBRATION ISOLATION AND HORIZONTAL RUNS IN WOODEN STUD WALLS.
   c. ELECTRICAL METALLIC TUBING (EMT) WITH COMPRESSION TYPE FITTINGS SHALL BE USED FOR BUILDING INTERIOR WORK.
   d. P.V.C. CONDUIT SHALL BE USED FOR UNDERGROUND CONDUITS. ROUTE CODE SIZED GROUND WIRE INSIDE OF CONDUIT. CONDUIT RISERS AND STUBS ABOVE GRADE SHALL BE I.M.C. WITH HALF-LAPPED TAPE COVERING OR P.V.C. COATING.

4. UNLESS OTHERWISE NOTED OR REFERENCED ON THE DRAWINGS ALL NEW ELECTRICAL WIRING IS TO BE 600V RATED COPPER WITH TYPE "THHN/THWN" INSULATION.

5. ALL MOUNTING HEIGHTS REFERENCED ON DRAWINGS ARE MEASURED FROM FINISHED FLOOR UNLESS OTHERWISE REFERENCED OR INDICATED ON THE DRAWINGS.

6. ALL ELECTRICAL EQUIPMENT LOCATIONS (LIGHTING, RECEPTACLE, FLOOR BOX, ETC.) ARE TO BE VERIFIED WITH THE ARCHITECT AND/OR EQUIPMENT SUPPLIER PRIOR TO BEGINNING ANY ROUGH-IN.

7. ALL LIGHTING FIXTURES SHALL BE MOUNTED AND SUPPORTED IN ACCORDANCE WITH OSHA STANDARDS, AND ALL STATE, LOCAL, SEISMIC, AND NATIONAL ELECTRIC CODES.

8. THE DRAWINGS INCLUDED IN THIS DOCUMENT SET ARE DIAGRAMMATIC. THEY ARE REPRESENTATIVE OF THE ENGINEER OF RECORDS DESIGN INTENT FOR ALL ELECTRICAL DEVICES/EQUIPMENT AND THE INDIVIDUAL POWER FEEDS THEY ARE TO BE CONNECTED TO. THE SELECTED EC SHALL BE RESPONSIBLE FOR PROVIDING ALL J-BOXES, CONDUIT, WIRING/ CABLING, ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION.

9. ALL ELECTRICAL EQUIPMENT (PANELS, RECEPTACLES, J-BOXES, ETC.) SHALL BE WEATHERPROOF AND/OR INSTALLED IN A NEMA 3R ENCLOSURE WHERE APPLICABLE OR INSTALLED OUTDOORS.

10. ALL ELECTRICAL WORK SHALL BE PERFORMED ACCORDING TO STATE, LOCAL, NATIONAL, AND DISTRICT STANDARDS AND CODES. COORDINATE SPECIFIC REQUIREMENTS WITH DISTRICT STANDARDS AND AUTHORITY HAVING JURISDICTION.

11. ALL ELECTRICAL EQUIPMENT SHALL BE NEW AND IS TO BE CLEARLY LABELED/IDENTIFIED AS UNDERWRITER LABORATORIES (UL) COMPLIANT UNLESS OTHERWISE NOTED OR REFERENCED IN THE DRAWINGS OR SPECIFICATIONS.

12. EC IS RESPONSIBLE FOR SECURING ALL REQUIRED BUILDING PERMITS AND SHALL INCLUDE THE COST TO SECURE BUILDING PERMITS IN THEIR FINAL BID.

13. UNLESS OTHERWISE WRITTEN, STATED, OR REFERENCED IN DRAWINGS OR SPECIFICATIONS CONTRACTOR SHALL GUARANTEE THE COMPLETE ELECTRICAL INSTALLATION FOR A PERIOD OF 1-YEAR.

14. ALL ELECTRICAL DISTRIBUTION EQUIPMENT (PANELS, DISTRIBUTION BOARDS, TRANSFORMERS, ETC), FEEDERS (CONDUIT, CONDUCTOR SIZE, AND QUANTITY), MECHANICAL EQUIPMENT, ELEVATORS, VARIABLE FREQUENCY DRIVES (VFD'S), ETC. MAY ONLY BE REFERENCED ON THE SINGLE-LINE DRAWING AND NOT INDIVIDUAL PLAN SHEETS. EC SHALL REVIEW AND VERIFY ALL REFERENCED INFORMATION ON THE SINGLE-LINE DRAWING.

15. EC SHALL BE RESPONSIBLE FOR ALL REQUIRED SAW-CUTTING, CORE DRILLING, PATCHING, REFINISHING, ETC. AS REQUIRED FOR INSTALLATION OF ELECTRICAL EQUIPMENT AND SYSTEMS. ANY PENETRATIONS OR OPENINGS MADE IN WALLS OR STRUCTURES SHALL BE PATCHED AND/OR SEALED AS REQUIRED TO MAINTAIN THE INTEGRITY AND/OR RATING OF THE WALL OR STRUCTURE.

16. EC SHALL VISIT THE SITE PRIOR TO SUBMISSION OF THEIR FINAL BID TO VERIFY ALL EXISTING SITE CONDITIONS WHICH MAY AFFECT THE COMPLETION OF THE ELECTRICAL INSTALLATION. ALL METHODS AND REQUIREMENTS FOR \ INSTALLATION SHALL BE DETERMINED PRIOR TO BID DATE. ELECTRICAL EC SHALL NOTIFY THE ENGINEER OF RECORD OF ANY REQUIRED MODIFICATIONS WHICH ARE NOT REFERENCED ON THESE ELECTRICAL PLANS. SUBMITTAL OF THE EC'S BID DEMONSTRATES THE CONTRACTOR'S AWARENESS OF ALL SITE CONDITIONS AND REQUIRED WORK TO BE PERFORMED.

17. EC IS RESPONSIBLE FOR COMPLETING ALL FINAL ELECTRICAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT AND SHALL PROVIDE ALL MOTOR START SWITCHES, DISCONNECTS, ETC. AS REQUIRED.

18. ALL ELECTRICAL EQUIPMENT CONNECTIONS, MOUNTING LOCATIONS, ELECTRICAL REQUIREMENTS, ETC. ARE TO BE COORDINATED AND VERIFIED PRIOR TO COMMENCEMENT OF ELECTRICAL ROUGH-IN.

19. EC TO SUBMIT SHOP DRAWINGS FOR THE APPROVAL OF THE ELECTRICAL ENGINEER OF RECORD FOR ALL ELECTRICAL EQUIPMENT AND MATERIALS TO BE UTILIZED IN THE ELECTRICAL INSTALLATION. ALL APPROVALS BY THE ENGINEER OF RECORD MUST BE SECURED PRIOR TO COMPLETION OF ANY PURCHASE ORDERS OR ROUGH-IN WORK.

20. THESE ELECTRICAL DRAWINGS AND ASSOCIATED SPECIFICATIONS ARE TO BE CONSIDERED CONTRACT DOCUMENTS FOR AGENCY REVIEW/APROVAL AND EC BIDDING PURPOSES.

21. THE COMPLETE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH NEC/CEC ARTICLE 250. ALL POWER AND LIGHTING CIRCUITS SHALL BE INSTALLED WITH A MINIMUM #12AWG CU GROUND WIRE UNLESS OTHERWISE NOTED OR REFERENCED.

22. EC TO PROVIDE ENGRAVED PHENOLIC NAMEPLATES ON ALL DISCONNECT SWITCHES, DISTRIBUTION EQUIPMENT, J-BOXES ETC. WITH METALLIC COVERS. SEE GENERAL NOTES ON SINGLE-LINE DIAGRAM FOR SPECIFIC INFORMATION REGARDING NAMEPLATE REQUIREMENTS.

25. AT THE COMPLETION OF THE PROJECT THE EC SHALL PROVIDE THE OWNER WITH A COMPLETE SET OF AS-BUILT ELECTRICAL DRAWINGS.

26. ANY AND ALL WORK THAT REQUIRES AN INTERRUPTION TO A BUILDING(S) ELECTRICAL SERVICE MUST BE COORDINATED WITH THE DISTRICT A MINIMUM OF 48 HOURS IN ADVANCE. ANY SERVICE DOWNTOWN SHALL NOT OCCUR DURING SCHOOL HOURS.

27. EC SHALL BE RESPONSIBLE FOR FOR ENSURING THAT ALL LOW VOLTAGE SYSTEMS ARE COMPATIBLE AND ARE COMPLETE AND OPERATIONAL.

28. EC SHALL PERMANENTLY TAG ALL CONDUCTORS IN EACH ELECTRICAL AND LOW VOLTAGE SYSTEM AS REFERENCED IN THE SPECIFICATIONS.

29. ANY SURFACE MOUNTED EXPOSED CONDUIT IN VIEW OF THE PUBLIC SHALL BE PAINTED TO MATCH THE FINISH OF THE SURFACE TO WHICH IT IS MOUNTED WITH TWO (2) COATS OF PAINT. ALL EXTERIOR SURFACE MOUNTED EXPOSED CONDUITS ARE TO BE PAINTED WITH TWO (2) COATS OF WEATHERPROOF LATEX PAINT.

30. THE SEISMIC ANCHORAGE OF ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30. ANCHORAGE DETAILS NOT SHOWN ON THE APPOROVED PLANS OR OTHERWISE APPROVED BY DSA ARE SUBJECT TO FIELD APPROVAL BY THE ARCHITECT AND/OR STRUCTURAL ENGINEER OF RECORD AND DSA.

31. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. AS SUCH, ALL ELECTRICAL EQUIPMENT LOCATIONS, CONDUIT ROUTING, ETC. ARE NOT PRECISE AND SHALL BE COORDINATED, VERIFIED, AND DETERMINED IN THE FIELD. EC TO INSTALL ALL ELECTRICAL EQUIPMENT AND ROUTE ALL CONDUITS IN LOCATIONS WHICH MEET CODE REQUIREMENTS FOR ACCESSIBILITY/MOUNTING AND DO NOT INTERFERE WITH ANY BUILDING STRUCTURES, UTILITIES, OR OTHER TRADE EQUIPMENT.

32. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED TO BE DEMOLISHED SHALL BE REMOVED ENTIRELY AND ALL AFFECTED SURFACES OR STRUCTURES SHALL BE REPAIRED, REPLACED, AND/OR REFINISHED TO MATCH THE ADJACENT SURFACES OR DAMAGED ITEM(S).

33. FOR CLARITY ONLY RECONSTRUCTION OR NEW WORK RELATED ELEMENTS AND SELECT EXISTING FACILITIES SPECIFICALLY REQUIRING COORDINATION WITH ANY NEW WORK.

34. ALL CONDUITS, BOXES, SURFACE MOUNTED RACEWAYS, SUPPORT DEVICES, AND ASSOCIATED FITTINGS SHALL BE MOUNTED IN CONCEALED LOCATIONS ABOVE CEILINGS, DUCTS, TRUSSES, BEAMS, ETC. IN AREAS WHERE A CONCEALED MOUNTING LOCATION IS NOT AVAILABLE EQUIPMENT SHALL BE PAINTED TO MATCH THE ADJACENT SURFACES.

35. ANY PENETRATIONS BY CONDUITS OR OTHER ELECTRICAL EQUIPMENT THROUGH A FIRE RATED WALL - WHETHER EXISTING OR NEW - SHALL MAINTAIN THE APPROPRIATE FIRE RATING BY SEALING THE PENETRATION WITH THE APPROPRIATE UL-LISTED FIRE-STOP MATERIAL/SYSTEM.

36. ELECTRICAL CONTRACTOR SHALL PREPARE AND SUBMIT THE FOLLOWING CALIFORNIA ENERGY COMMISSION T-24 FORMS: CERTIFICATE OF ACCEPTANCE LTG-1-1, PARTS 1, 2, & 3; LIGHTING CONTROL LTG-2-A; AND/OR AUTOMATIC DAYLIGHTING CONTROL LTG-3-A, AS THEY APPLY TO THE BUILDING DEPARTMENT PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.

MEP COMPONENT ANCHORAGE NOTE:

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA-approved construction documents. The following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2022 CBC Sections 1617A.1.18 through 1617A.1.26 and ASCE 7-16 Chapters 13, 26, and 30:

1. All permanent equipment and components.
2. Temporary, movable or mobile equipment that is permanently attached (e.g., hard wired) to the building utility services such as electricity, gas or water. "Permanently attached" shall include all electrical connections except plugs for 110/220 volt receptacles having a flexible cable.
3. Temporary, movable or mobile equipment which is heavier than 400 pounds or has a center of mass located 4 feet or more above the adjacent floor or roof level that directly support the component is required to be restrained in a manner approved by DSA.

The following mechanical and electrical components shall be positively attached to the structure but need not demonstrate design compliance with the references noted above. These components shall have flexible connections provided between the component and associated ductwork, piping, and conduit. Flexible connections must allow movement in both transverse and longitudinal directions:

A. Components weighing less than 400 pounds and having a center of mass located 4 feet or less above the adjacent floor or roof level that directly support the component.
B. Components weighing less than 20 pounds, or in the case of distributed systems, less than 5 pounds per foot, which are suspended from a roof or floor or hung from a wall.

The anchorage of all mechanical, electrical and plumbing components shall be subject to the approval of the design professional in general responsible charge or structural engineer delegated responsibility and acceptance by DSA. The project inspector will verify that all components and equipment have been anchored in accordance with the above requirements.

Piping, Ductwork, and Electrical Distribution System Bracing Note

Piping, ductwork, and electrical distribution systems shall be braced to comply with the forces and displacements prescribed in ASCE 7-16 Section 13.3 as defined in ASCE 7-16 Sections 13.6.5, 13.6.6, 13.6.7, 13.6.8; and 2022 CBC, Sections 1617A.1.24, 1617A.1.25 and 1617A.1.26.

The method of showing bracing and attachments to the structure for the identified distribution system are as noted below. When bracing and attachments are based on a preapproved installation guide (e.g., HCAi OPM for 2013 CBC or later), copies of the bracing system installation guide or manual shall be available on the jobsite prior to the start of and during the hanging and bracing of the distribution systems. The Structural Engineer of Record shall verify the adequacy of the structure to support the hanger and brace loads.

Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP), Electrical Distribution Systems (E):

MP☐ MD☐ PP☐ E☒ Option 1: Detailed on the approved drawings with project specific notes and details.

MP☐ MD☐ PP☐ E ☐ Option 2: Shall comply with HCAi (OSHPD) Preapproval (OPM #) #0052-13.

NOTE:

ALL LOW VOLTAGE CONDUIT FOR MECHANICAL CONTROLS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. SEE MECHANICAL DRAWINGS FOR LOCATIONS.

ANNOTATIONS

EF / 2 — MECHANICAL EQUIPMENT CALLOUT, "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.

3 / E-1 — DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.

XXX-X — LIGHTING FIXTURE DESIGNATION

X — PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.

1 — REVISION REFERENCE.

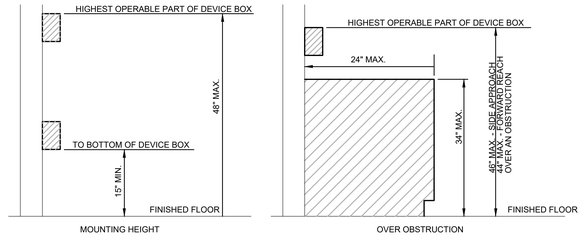
WYE CONFIGURATION — DELTA CONFIGURATION

GROUND

POWER SYMBOLS

- DUPLEX RECEPTACLE - MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED.
- DOUBLE DUPLEX RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED.
- DUPLEX RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED. DEVICE TO BE CONTROLLED ON/OFF BY OCCUPANCY SENSOR PER CALIFORNIA T-24 REQUIREMENTS. DEVICE IS TO BE GREEN IN COLOR CLEARLY LABELED AND ENGRAVED WITH "SENSOR CONTROLLED" TO IDENTIFY ITS PURPOSE TO THE USER. REFER TO LIGHTING CONTROL WIRING DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- DUPLEX, GFCI RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED. WP INDICATES WEATHERPROOF, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, GFCI RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED. WP INDICATES WEATHERPROOF, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- SIMPLEX RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED.
- SIMPLEX RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED.
- SPECIAL RECEPTACLE, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS OR AS NOTED. REFER TO PLAN NOTES.
- DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DOUBLE DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- SIMPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- SPECIAL RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED.
- DOUBLE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED.
- DUPLEX, GFCI RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED. WP INDICATES WEATHERPROOF, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, GFCI RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED. WP INDICATES WEATHERPROOF, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- SIMPLEX RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED.
- SPECIAL RECEPTACLE MOUNTED ABOVE COUNTER, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS - UON OR REQUIRED.
- WALL MOUNTED JUNCTION BOX. MOUNTING HEIGHT AS NOTED. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
- JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
- ELECTRICAL CONNECTION TO INTERACTIVE MARKER-BOARD. COORDINATE CONNECTION TYPE AND REQUIREMENTS WITH MANUFACTURER'S INSTALLATION GUIDES. VERIFY MOUNTING LOCATION AND HEIGHT WITH ARCHITECT AND DISTRICT EQUIPMENT INSTALLER PRIOR TO ROUGH-IN OF ELECTRICAL.
- SURFACE MOUNTED MULTI-OUTLET ASSEMBLY. REFER TO GENERAL PRODUCT SPECIFICATIONS. PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION.
- THERMOSTAT OUTLET BOX, PROVIDE 1/2"C.O. TO RESPECTIVE MECHANICAL UNIT.
- EXHAUST FAN, OR MOTOR LOAD. REFER TO MECHANICAL, PLUMBING OR KITCHEN DRAWINGS FOR SPECIFIC LOAD REQUIREMENTS OR AS NOTED.
- FLUSH MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- DISTRIBUTION SWITCHBOARD. REFER TO SINGLE LINE DIAGRAM.
- TRANSFORMER, REFER TO SINGLE LINE DIAGRAM.
- FUSED DISCONNECT SWITCH, HP RATED, OR COMBINATION MOTOR STARTER/DISCONNECT SWITCH WITH FUSES PER EQUIPMENT MANUFACTURER AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT AND STARTER SIZES.
- NON-FUSED DISCONNECT SWITCH, HP RATED AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT SIZES.
- M / CT. — UTILITY COMPANY METER. PROVIDE "CT's" AND "PT's" AS REQUIRED, REFER TO SINGLE LINE DIAGRAM.
- 1 / ST / 150AF 150AT 3P — CIRCUIT BREAKER, LINE 1 REPRESENTS FRAME SIZE/RATING; LINE 2 REPRESENTS TRIP SIZE/RATING; LINE 3 REPRESENTS NUMBER OF POLES AND LINE 4 REPRESENTS MISCELLANEOUS BREAKER INFO. (SEE BELOW):
  ST = PROVIDE SHUNT TRIP MECHANISM.
  HACR = PROVIDE HACR-RATED BREAKER.
  GFP = GROUND FAULT PROTECTION
  CLCB = CURRENT LIMITING CIRCUIT BREAKER
  SS = PROVIDE SOLID STATE CIRCUIT BREAKER
- 60AS 3P / 50AF CLASS J — FUSIBLE SWITCH: LINE 1 REPRESENTS SWITCH SIZE/RATING; LINE 2 REPRESENTS NUMBER OF POLES; LINE 3 REPRESENTS FUSE SIZE/RATING; LINE 4 REPRESENTS FUSE TYPE; LINE 5 REPRESENTS MISCELLANEOUS FUSE INFO. (SEE BELOW):
  SHUNT= PROVIDE SHUNT TRIP MECHANISM.
  GFP = GROUND FAULT PROTECTION
  CLF = CURRENT LIMITING FUSE
- GROUND CONNECTION, SIZE AS INDICATED OR AS REQUIRED.
- 3 / $a,b — SINGLE POLE SWITCHES, MOUNTING HEIGHT PER ADA DEVICE MOUNTING REQUIREMENTS. SUBSCRIPTS AT SYMBOL INDICATE THE FOLLOWING:
  2 - DOUBLE POLE — LV - LOW VOLTAGE
  3 - THREE WAY — P - PILOT LIGHT
  4 - FOUR WAY — R - REMOTE CONTROL
  K - KEY OPERATED — M - MOTOR STARTING
  NOTE: ALL WALL SWITCHES CONTROLLING EMERGENCY CIRCUITS SHALL BE ENGRAVED WITH "EMERGENCY"
- PB OR P — PULLBOX, SIZED PER N.E.C. OR AS NOTED.

ADA DEVICE MOUNTING DETAIL



UNLESS SPECIFICALLY SHOWN ON THESE PLANS, STRUCTURAL MEMBERS SHALL NOT BE CUT, DRILLED, OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

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714.915.4504

LICENSED ARCHITECT — RAND C. NICHOLL — NO. C-19066 — EXP. 02-28-2025 — STATE OF CALIFORNIA

CONSULTANT:

REGISTERED PROFESSIONAL ENGINEER — KEVIN M. SHEA — No. E 18389 — 12.31.2024 — ELECTRICAL — STATE OF CALIFORNIA

AG Design Inc.
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2100 W Orangewood Ave Suite 165 | Orange, CA 92868

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

No.	Rev. Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
ELECTRICAL COVER SHEET

SHEET NO:
E000

MOUNTING : SURFACE (E) PANEL LOAD CENTER MAIN MLO

208 / 120 VOLTS 1 PHASE 3 WIRE A.I.C. RATING : 10,000 BUS 125A

	DESCRIPTION	VOLT AMPS Ø A	VOLT AMPS Ø B	LTG	REC	MISC	BRK	CIRC		CIRC	BRK	MISC	REC	LTG	VOLT AMPS Ø A	VOLT AMPS Ø B	DESCRIPTION	
✱	FREEZER LTG						20/1	1		2	20/1						WALK-IN	✱
	-						-	3		4	-							
✱	DESK PLUG/MILK COOLER (ER)						20/1	5		6	20/1						WALK-IN	✱
	PLUG/PLUG (ER)						20/1	7		8	-						-	
	BY SINK (ER)						20/1	9		10	20/1						WINDOW A/C (ER)	
✱	NORTH WALK-IN						20/1	11		12	-						-	
✱	NORTH WALK-IN						20/1	13		14							SPACE	
	SPACE							15		16							SPACE	
	VA	Ø A =	-												Ø B =	-		
	TOTAL VA =	-	+ LCL =	-	VA		AMPS =	-			LCL =	-			x 25% =	-	VA	
	HIGH PH. VA =	-	+ LCL =	-	VA		HIGH PH. AMPS =	-			HIGH PH. LCL =	-			x 25% =	-	VA	

20A 1P C.B. ARE TWIN CIRCUIT BREAKERS
TYPICAL FOR CKTS 5,7,9.11 &13.

(ER) - EXISTING TO REMAIN.

✱ - EXISTING LOAD TO BE REMOVED. (LABEL CIRCUIT AS SPARE).



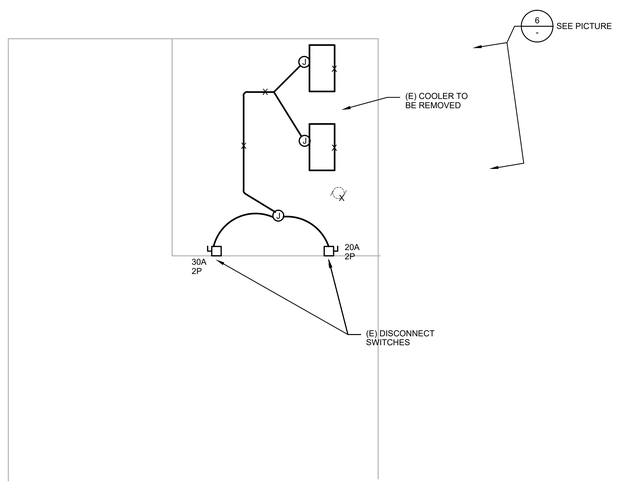
4 WALK IN FREEZERS



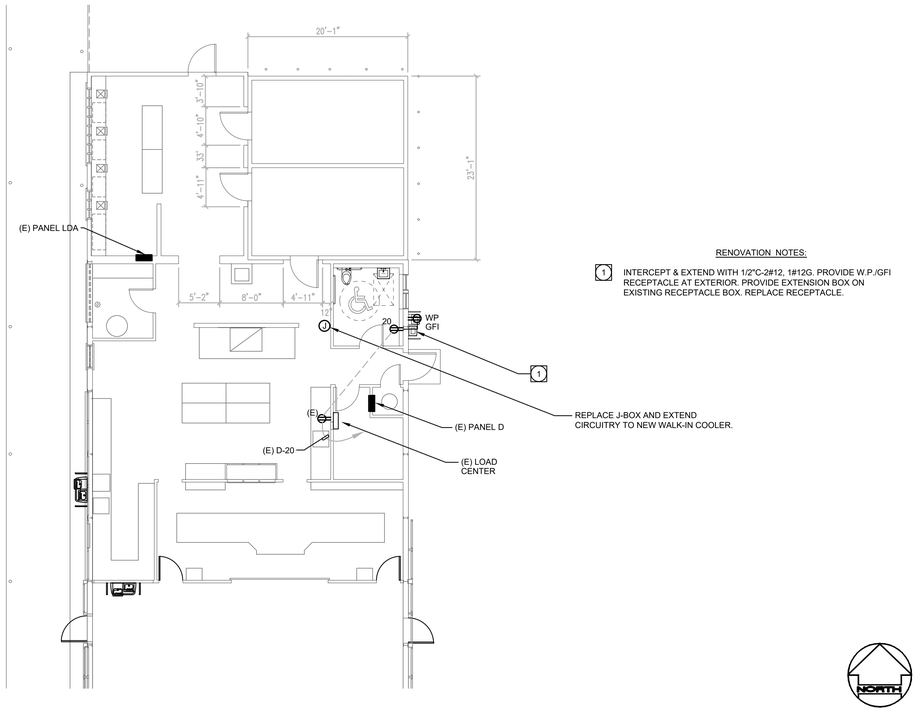
6 EXTERIOR WALK–IN



5 EXISTING WALK SWITCH AND J–BOX



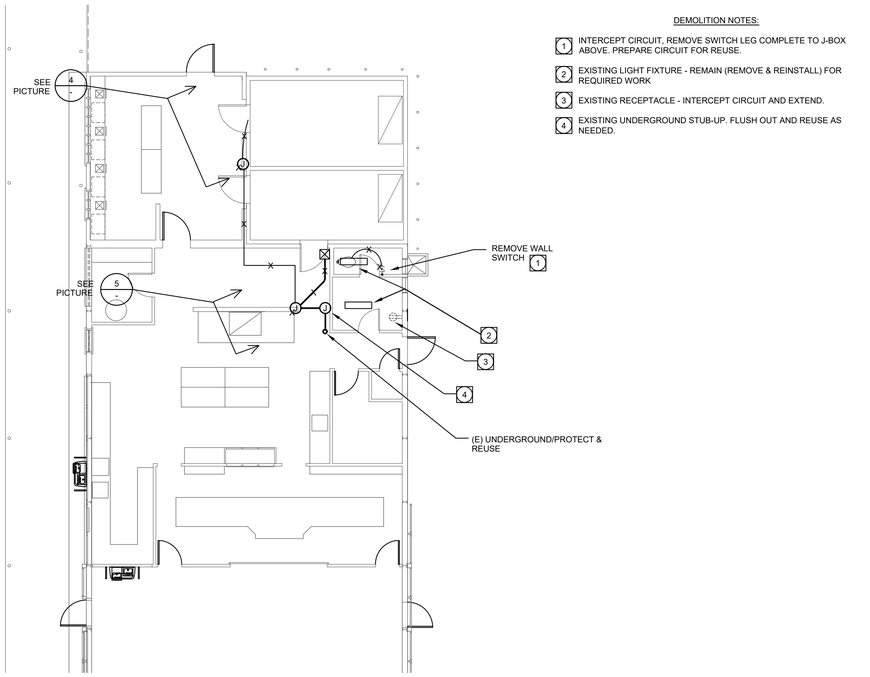
DEMOLITION ROOF PLAN – WALK IN REFRIGERATOR & FREEZER 3



RENOVATION NOTES:

1 INTERCEPT & EXTEND WITH 1/2"C-2#12, 1#12G. PROVIDE W.P./GFI RECEPTACLE AT EXTERIOR. PROVIDE EXTENSION BOX ON EXISTING RECEPTACLE BOX. REPLACE RECEPTACLE.

RENOVATION PLAN – WALK IN REFRIGERATOR & FREEZER 1
1/8"=1'-0"



DEMOLITION NOTES:

1 INTERCEPT CIRCUIT, REMOVE SWITCH LEG COMPLETE TO J-BOX ABOVE. PREPARE CIRCUIT FOR REUSE.

2 EXISTING LIGHT FIXTURE - REMAIN (REMOVE & REINSTALL) FOR REQUIRED WORK

3 EXISTING RECEPTACLE - INTERCEPT CIRCUIT AND EXTEND.

4 EXISTING UNDERGROUND STUB-UP. FLUSH OUT AND REUSE AS NEEDED.

DEMOLITION PLAN – WALK IN REFRIGERATOR & FREEZER 2
1/8"=1'-0"

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LICENSED ARCHITECT RAND C. NICHOLL NO. C-19066 EXP. 02-28-2025 STATE OF CALIFORNIA

CONSULTANT:

REGISTERED PROFESSIONAL ENGINEER No. E 18389 12.31.2024 ELECTRICAL STATE OF CALIFORNIA

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CLIENT:

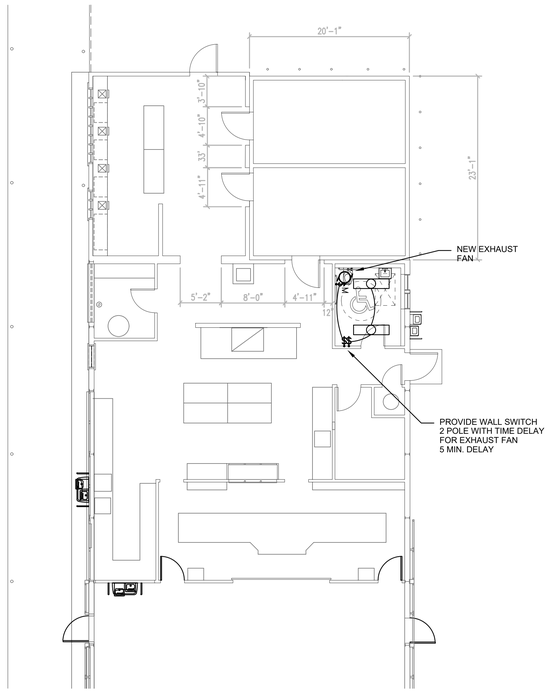
DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

No.	Rev. Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

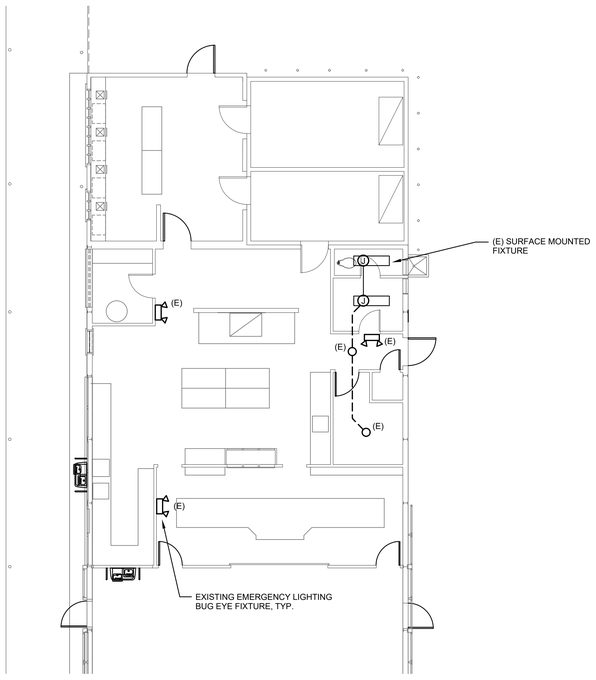
SHEET DESCRIPTION:
RENOVATION & DEMO PLAN

SHEET NO:
E101



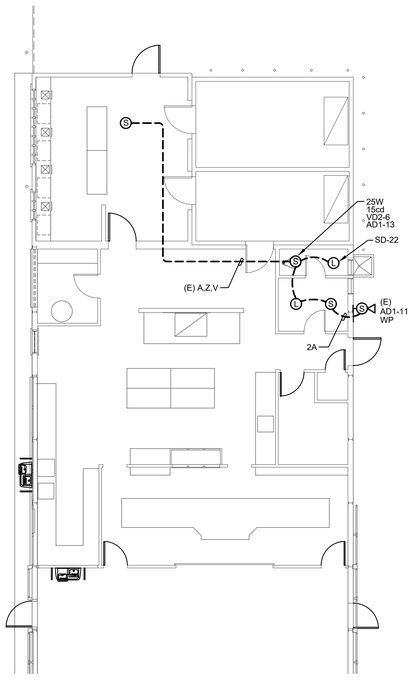
NEW RCP – WALK IN REFRIGERATOR & FREEZER | 3

1/8"=1'-0"



EXISTING RCP – WALK IN REFRIGERATOR & FREEZER | 2

1/8"=1'-0"



PLAN LEGEND:

- (S) (E) CEILING MOUNTED SMOKE DETECTOR
- (C) (E) CEILING MOUNTED STROBE LIGHT
- (E) EXTERIOR SPEAKER

SHEET NOTE:

EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISTURBED. EXISTING FIRE ALARM SYSTEM SHALL REMAIN OPERATIONAL DURING THE REFRIGERATION CONSTRUCTION.

EXISTING FIRE ALARM PLAN – WALK IN REFRIGERATOR & FREEZER | 1

1/8"=1'-0"

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LICENSED ARCHITECT
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NO. C-19066
EXP. 02-28-2025
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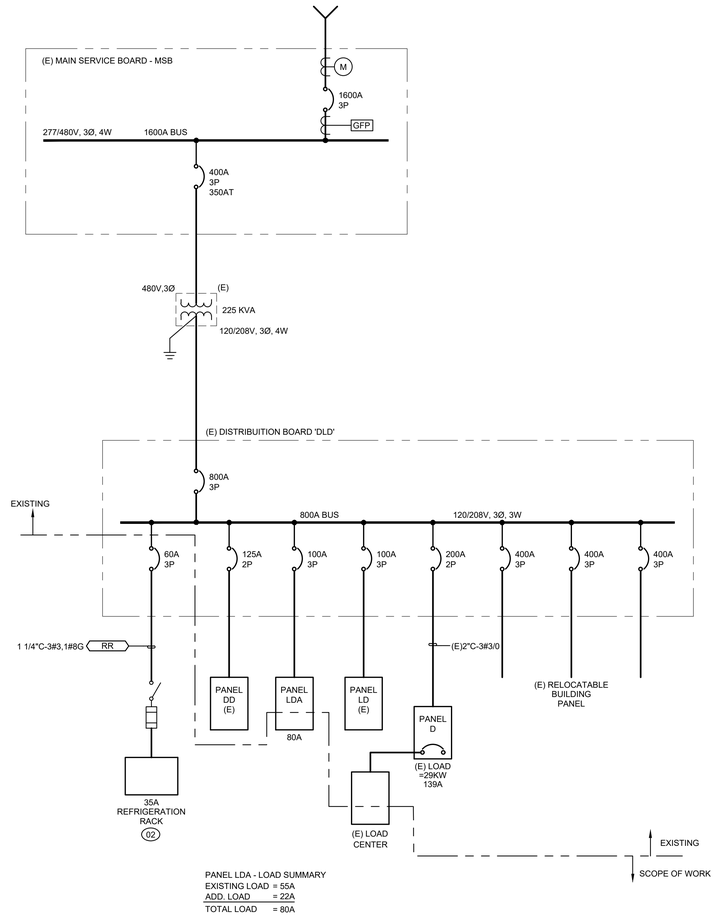
DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
FIRE ALARM & RCP

SHEET NO:
E102

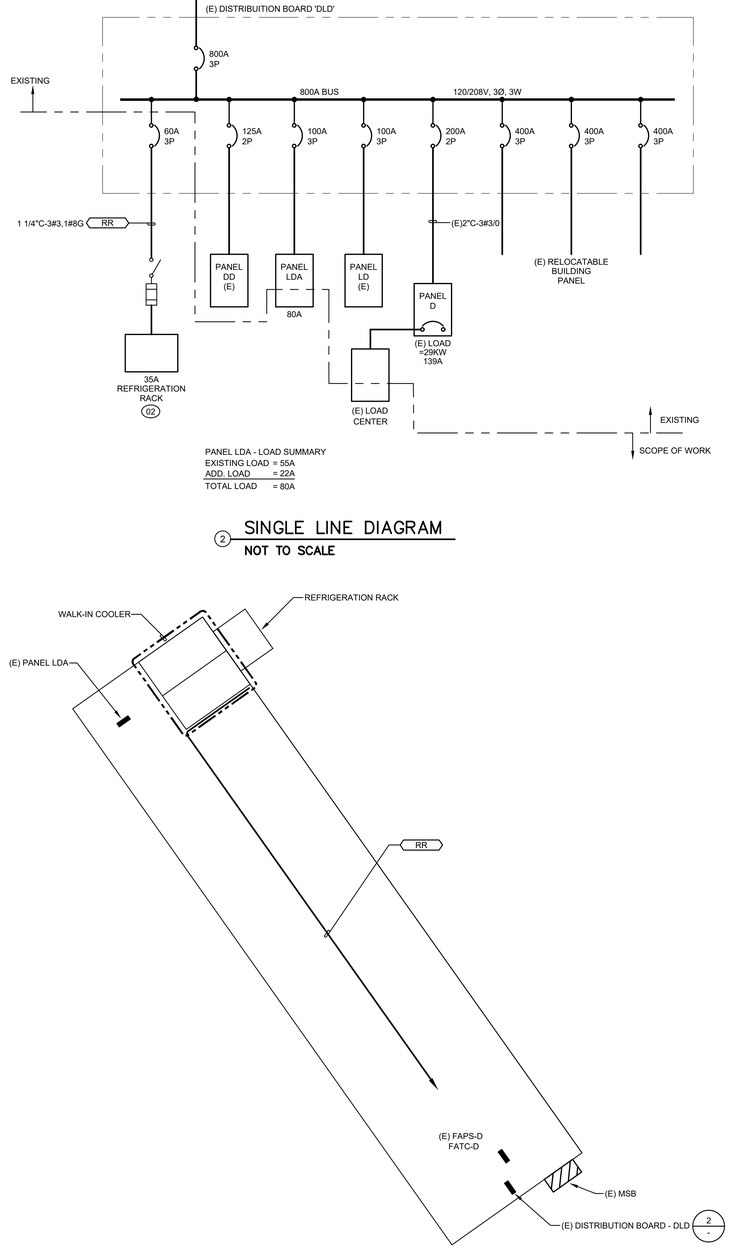


2 SINGLE LINE DIAGRAM
NOT TO SCALE

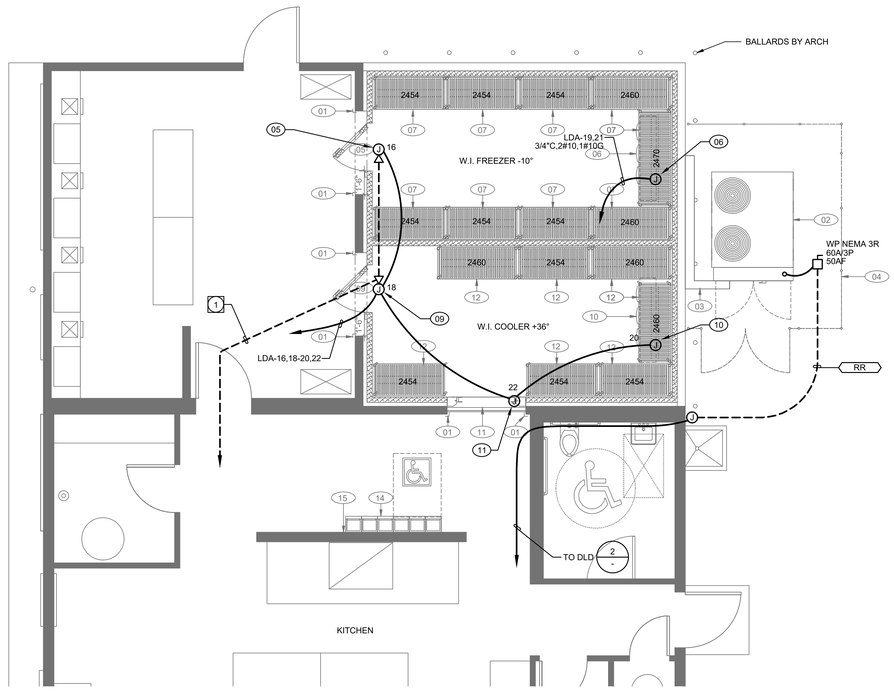
MOUNTING: FLUSH — PANEL LDA — MAIN 100A
208 / 120 VOLTS — 3 PHASE — 4 WIRE — A.I.C. RATING : — BUS 125A

DESCRIPTION	VOLT AMPS Ø A	Ø B	Ø C	LTG	REC	MISC	BRK	CIRC	CIRC	BRK	MISC	REC	LTG	VOLT AMPS Ø A	Ø B	Ø C	DESCRIPTION
RECEPT	540				3		20/1	1	2	20/1	1			1500			DRINK COOLER
RECEPT		360			2		20/1	3	4	20/1	1				1500		ICE CREAM
FLY FAN			500		1		20/1	5	6	20/1	1					1500	WARMERS
REFRIGERATOR	1200						20/1	7	8	20/1	1			1500			WARMERS
FREEZER		1200					20/1	9	10	20/1	1				1500		WARMERS
REF/FREEZER			1200				20/1	11	12	20/1	1					1500	WARMERS
REF/FREEZER	1200						20/1	13	14	20/1	1			696			EXHAUST FAN
DRINK COOLER		1500					20/1	15	16	20/1					1200		5
WARMER			1500				20/1	17	18	20/1						1200	9
6	1768					1	30/2	19	20	20/1				1152			10
-		1768					-	21	22	20/1					600		11
SPACE								23	24								SPACE
Ø A = 9556 VA	Ø B = 9628 VA							Ø C = 7400 VA						LCL = (N/A)			LARGEST MOTOR (LM) = (N/A)
TOTAL (Ø A + Ø B + Ø C) = 26584 VA + 25% LCL + 25% LARGEST MOTOR = 26584 VA OR 73.8 AMPS																	
HIGH PHASE (Ø B) = 9628 VA + 25% LCL + 25% LARGEST MOTOR = 9628 VA OR 80.2 AMPS																	

✳ - ADD CIRCUIT BREAKER / CONNECT LOAD



3 OVERALL BUILDING 'D' PLAN
SCALE: 1"=16'-0"



EXISTING FIRE ALARM PLAN – WALK IN REFRIGERATOR & FREEZER
1
1/8"=1'-0"

PLAN NOTES:

1. PROVIDE CAT 5E DATA DROP TO SERVER. PROVIDE 3/4"C CONDUIT PATHWAY.

EQUIPMENT SCHEDULE

02 REFRIGERATION RACK - 50A / 3P
FUSE SIZE = 50A
35A CONNECTED LOAD
39.3 MCA

05 WALK-IN FREEZER - 120V 10A
WIRE THRU LIGHT SWITCH & DRAIN LINE, HEATERS VACUUM RELIEF PORT. SEE FS-303.

06 FREEZER EVAPORATOR COIL - 17A 208V
SEE DETAIL C/FS-302

09 WALK-IN COOLER - 120V 10A
WIRE THRU LIGHT SWITCH & DRAIN LINE, HEATERS VACUUM RELIEF PORT. SEE FS-303.

10 COOLER EVAPORATOR COIL - 9.6A 120V
SEE DETAIL C/FS-302

11 ROLL DOWN DOOR - 120V

NOTE:
INCLUDE ELECTRICAL ITEMS AS REFERENCED IN FOOD SERVICE EQUIPMENT DRAWINGS FOR COMPLETE CONNECTION.

RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
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714.915.4504

LICENSED ARCHITECT — RAND C. NICHOLL — NO. C-19066 — EXP. 02-28-2025 — STATE OF CALIFORNIA

CONSULTANT:

REGISTERED PROFESSIONAL ENGINEER — ANDREW GOEDEN — No. E 18389 — 12.31.2024 — ELECTRICAL — STATE OF CALIFORNIA

AG Design Inc.
Consulting Electrical Engineers
714.769.9900
www.AGDesignEng.com
2100 W Orangewood Ave Suite 165 | Orange, CA 92868

PROJECT NAME:

FOOD SERVICE RENOVATIONS
SUSSMAN MIDDLE SCHOOL
12500 BIRCHDALE AVENUE
DOWNEY, CA 90242

CLIENT:

DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
ENLARGED KITCHEN PLAN

SHEET NO:
E103

MECHANICAL-PLUMBING ABBREVIATIONS AND SYMBOLS LIST

PLUMBING ABBREVIATIONS

ABV	ABOVE
ABV CLG	ABOVE CEILING
AC	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECTURAL
@	AT
BEL	BELOW
BFP	BACKFLOW PREVENTER
BLV	BALL VALVE
BR	BRANCH
CD	CONDENSATE
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONT	CONTINUE OR CONTINUATION
COTG	CLEAN OUT TO GRADE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DN	DOWN
DWG	DRAWING
E	EXISTING
FCO	FLOOR CLEAN OUT
FLR	FLOOR
FOC	FACE OF CURB
FT	FEET
G	GAS–LOW PRESSURE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HIGH
HDR	HEADER
HW	HOT WATER
HWR	HOT WATER RETURN
IPS	IRON PIPE SIZE
IE	INVERT ELEVATION
L	LONG
LAV	LAVATORY
LBS	POUNDS
MBH	THOUSAND BTU PER HOUR
MIN	MINIMUM
MPG	GAS–MEDIUM PRESSURE
MUA	MAKE–UP AIR
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
OPWT	OPERATING WEIGHT
POC	POINT OF CONNECTION
PSI	POUNDS PER SQUARE INCH
PSIA	PSI GAUGE
RD	ROOF DRAIN
REQ'D	REQUIRED
SHT	SHEET
SOV	SHUT OFF VALVE
SPEC	SPECIFICATION
SQ. FT.	SQUARE FEET
STL	STEEL
TEMP	TEMPERATURE
TP	TRAP PRIMER
TYP	TYPICAL
U	URINAL
UTR	UP THRU ROOF
V	VENT
VTR	VENT THRU ROOF
W/	WITH
WHA	WATER HAMMER ARRESTER
W/O	WITHOUT
WTR	WATER
WCO	WALL CLEANOUT
WC	WATER CLOSET
WT	WEIGHT
YB	YARDBOX

1. SYMBOLS AND ABBREVIATIONS ARE SHOWN FOR REFERENCE; NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED.
2. ALL NOTES ON THIS SHEET REMAIN PART OF THE CONTRACT DOCUMENTS.

PLUMBING SYMBOLS

PIPING BRANCH	SANITARY WASTE ABOVE GRADE
PIPE DROP	EXISTING SANITARY WASTE
PIPE RISE	SANITARY WASTE BELOW GRADE
RISER OR DROP	SANITARY VENT ABOVE GRADE
BRANCH – TOP CONNECTION	SANITARY VENT BELOW GRADE
BRANCH – BOTTOM CONNECTION	CONDENSATE DRAIN
GATE VALVE OR SHUT–OFF VALVE	DOMESTIC COLD WATER ABOVE GRADE
WATER HAMMER ARRESTER	DOMESTIC COLD WATER BELOW GRADE
SLOPE – IN DIRECTION OF ARROW	EXISTING DOMESTIC COLD WATER
FLOW – IN DIRECTION OF ARROW	GAS – LOW PRESSURE
GAS/WATER SHUT–OFF VALVE IN YARDBOX	EXISTING GAS – LOW PRESSURE
FLOOR CLEANOUT	DOMESTIC HOT WATER ABOVE GRADE
CLEANOUT IN YARDBOX – TRAFFIC WEIGHT	HOT WATER RETURN ABOVE GRADE
WALL CLEANOUT	REPRESENTS REMODEL NOTES
HOSE BIBB WITH VACUUM BREAKER	REPRESENTS DETAIL NUMBER / REPRESENTS PLUMBING SHEET
TRAP PRIMER	REPRESENTS PLUMBING FIXTURE / REPRESENTS QUANTITY

SPECIAL NOTE

ALL PLUMBING DRAWINGS CONTAINED IN THIS SET SHALL DISPLAY THE DIVISION OF THE STATE ARCHITECT STAMP BEFORE THESE DRAWINGS CAN BE USED AS CONSTRUCTION DOCUMENTS.

COORDINATION

THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW IN GENERAL WHERE THE PIPING AND OTHER WORK SPECIFIED IN THE DIVISION 22 SECTIONS OF THE SPECIFICATIONS IS TO BE LOCATED. THE DRAWINGS DO NOT NECESSARILY INDICATE ANY AND ALL OFFSETS AND CONFIGURATIONS REQUIRED FOR COORDINATION WITH THE SPACE REQUIREMENTS OF OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT PLACING, LOCATION AND CONNECTION OF THIS WORK IN RELATION TO THE WORK OF OTHER TRADES.

THE CONTRACTOR, SHALL EXAMINE ALL MECHANICAL, ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND OTHER DRAWINGS THAT HAVE BEEN PREPARED FOR THIS PROJECT, AND ACCEPT SUCH CONDITIONS, AND MAKE ALLOWANCES FOR THEM IN PREPARING THE BID.

GENERAL NOTES

1.– THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

2.– FOR BUILDING LOCATIONS, FINISH FLOOR, AND GRADE ELEVATIONS, SEE ARCHITECTURAL AND CIVIL DRAWINGS.

3.– FOR PIPING RUNNING THROUGH AND PARALLEL TO FOOTING, SEE STRUCTURAL DRAWINGS.

4.– BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING, PRIOR TO START OF ANY TRENCHING, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

5.– FOR SERVICE CONNECTIONS TO INDIVIDUAL FIXTURES REFER TO SPECIFICATIONS.

6.– ALL PLUMBING FIXTURE VENTS TO TERMINATE A MIN. OF 12 INCHES FROM ANY VERTICAL SURFACE AND 10 FEET FROM, OR 3 FEET ABOVE, ANY OUTSIDE AIR INTAKES.

7.– THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING ACCESS PANELS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN AND THE ELECTRICAL LIGHTING LAYOUT.

8.– EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS

9.– CONNECTION BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE BUILDING SHALL BE MADE WITH TWO (2) DIELECTRIC UNIONS SEPARATED BY A 12" SECTION OF RED BRASS PIPE.

10.– ALL CUTTING OF EXISTING PAVINGS, WALKS AND/OR FLOORS SHALL BE BY MACHINE SAW CUTTING. HOLES FOR PIPING IN CONCRETE WALLS OR FLOORS SHALL BE DONE BY CORE DRILLING EQUIPMENT.

11.– THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL PAVED AREAS, WHICH ARE EXCAVATED AND/OR DAMAGED BY HIS OPERATIONS.

12.– ALL CONNECTIONS TO EXISTING SERVICES SHALL BE MADE SUCH THAT INTERRUPTION TIME WILL BE AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL GIVE THE OWNER'S REPRESENTATIVE SUFFICIENT NOTICE OF SUCH INTERRUPTION AND THE ACTUAL SHUT–DOWN TIME SHALL BE AT A TIME DESIGNATED BY THE OWNER'S REPRESENTATIVE.

13.– COORDINATE LOCATION OF GAS & CONDENSATE CONNECTIONS ON MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

14.– ALL SHUT–OFF VALVES, OUTSIDE THE BUILDINGS, SHALL BE IN CONCRETE YARD BOXES WITH THE NAME OF THE SERVICE CONSPICUOUSLY CAST IN THE COVER.

15.– DURING THE PROGRESS OF WORK THE PLUMBING CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND TRADE NAMES). MATERIALS, SIZES, LOCATIONS AND HOOK–UP POINTS. AS–BUILTS SHALL BE GIVEN TO THE OWNER'S CONSTRUCTION MANAGER AT COMPLETION OF JOB.

16.– INSTALL ALL PLUMBING TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. NO WATER OR DRAIN PIPING PERMITTED OVER OR UNDER ELECTRICAL PANELS.

17.– ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL CODES, RULES AND REGULATIONS GOVERNING THIS PROJECT AS SET FORTH BY THE LOCAL ADMINISTRATIVE AUTHORITY.

18.– SEE ARCHITECTURAL DRAWINGS FOR ACCESSIBLE FIXTURE LOCATIONS AND MOUNTING HEIGHTS. (INSULATE ALL EXPOSED HOT WATER AND DRAIN PIPING BELOW ACCESSIBLE LAVATORIES AND SINKS WITH PREFORMED INSULATED FITTING COVERS (TRUEBRO OR EQUAL) WITH A MAX. FLAME SPREAD RATING OF 25, MAX. SMOKE RATING OF 50 PER ASTM E–84) OFFSET P–TRAP AGAINST WALL. ALSO, ALL FLUSH VALVES SHALL BE ON WIDE SIDE OF STALL.

19.– ALL CONDENSATE PIPING IN ATTIC SPACES SHALL BE INSULATED WITH 3/4" MICRO–LOK INSULATION WITH A MAX. FLAME SPREAD RATING OF 25, MAX. SMOKE RATING OF 50 PER ASTM E–84.

20.– ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONTRACTOR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC.

21.– ALL VALVES, UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHERWISE INDICATED ON DRAWINGS.

22.– BEFORE FABRICATION OR INSTALLATION THIS CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT AND EQUIPMENT PROVIDED UNDER ANOTHER SECTION OF SPECIFICATIONS. EXACT ROUGH–IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.

23.– THE PLUMBING CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS FOR ALL POINTS OF CONNECTION WITH THE GENERAL CONTRACTOR AND OTHER TRADES PRIOR TO BID.

24.– ALL WASTE AND VENT PIPING SHALL SLOPE AT 2% MIN. UNLESS OTHERWISE INDICATED.

25.– ALL VALVES, TRAP PRIMER, WATER HAMMER ARRESTORS OR OTHER EQUIPMENT SHOWN IN WALLS OR ABOVE NON–ACCESSIBLE CEILINGS SHALL BE INSTALLED BEHIND AN ACCESS PANEL.

26.– ALL LAVATORIES TO BE EQUIPPED WITH PRESSURE COMPENSATING FLOW CONTROL DEVICES RESTRICTING THE FLOW TO 0.35 GPM., FAUCET CONTROLS SHALL REQUIRE NO MORE THAN 5 LBS/FORCE TO OPERATE.

27.– WATER OR SOIL PIPE BELOW GRADE OUTSIDE SHALL HAVE MINIMUM COVER AS RECOMMENDED BY LOCAL AUTHORITIES.

28.– BEFORE ANY USE OF WATER SYSTEM IS MADE FOR DOMESTIC PURPOSES, IT SHALL BE STERILIZED BY SLOWLY FILLING THE SYSTEM WITH A WATER– CHLORINE SOLUTION CONTAINING AT LEAST FIFTY (50) PPM OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED OFF AND ALLOWED TO STAND FOR TWENTY FOUR (24) HOURS; OR, THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER–CHLORINE SOLUTION CONTAINING AT LEAST TWO HUNDRED (200) PPM OF CHLORINE AND ALLOWED TO STAND FOR THREE (3) HOURS. FOLLOWING THE ALLOWED STANDING TIME, THE SYSTEM SHALL BE FLUSH WITH CLEAN POTABLE WATER UNTIL THE CHLORINE RESIDUAL IN THE WATER COMING FROM THE SYSTEM DOES NOT EXCEED THE CHLORINE RESIDUAL IN THE FLUSHING WATER. THIS PROCEDURE OF FLUSHING THE SYSTEM SHALL BE REPEATED IF IT IS SHOWN BY BACTERIOLOGICAL EXAMINATION MADE BY AN APPROVED AGENCY THAT CONTAMINATION PERSIST IN THE SYSTEM.

29.– ALL PLUMBING WORK SHALL CONFORM TO 2022 CPC.

30.– UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, NEITHER DRILLED NOT NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

SEISMIC RESTRAINT

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7–16 CHAPTERS 13, 26 AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. ALL TEMPORARY, MOVEABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS, OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVEABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVE OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN ASCE 7–16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☒ E ☐ – OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ – OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE–APPROVAL (OPM#) #_____ .

EXHAUST FAN SCHEDULE

UNIT SYMBOL	EF–1
LOCATION	RESTROOM
SERVICE	GENERAL EXHAUST
TYPE	CEILING
MANUFACTURER	COOK
MODEL	GC–162
FAN – CFM	75
EXTERNAL S.P. – "WG	0.5
DRIVE TYPE	DIRECT
FAN MOTOR – HP	0
FAN MOTOR – RPM	935
OUTLET VELOCITY – FPM	382
TIP SPEED – FPM	1867
DISCHARGE LOCATION	SIDEWALL
WHEEL TYPE	FORWARD CURVE
VOLTAGE / PHASE	120 / 1
CURB TYPE	RCG
OPERATING WEIGHT – LBS	15
DETAIL REFERENCE	2/MP001
INTERLOCK	––
REMARKS	(1)(2)(3)

REMARKS
1– UNIT COMPLETE WITH BACKDRAFT DAMPER.
2– PROVIDE UNIT MANUFACTURER'S FAN SPEED CONTROLLER.
3– INTERLOCK WITH LIGHT SWITCH/LIGHTING CONTROL. EXHAUST FAN SHALL TURN ON UPON ACTIVATION OF LIGHT SWITCH/LIGHTING CONTROL OF ANY ROOM IT SERVES.

PLUMBING FIXTURE SCHEDULE

ITEM	FIXTURE	ROUGH–IN CONNECTIONS: COLD WATER	HOT WATER	WASTE	VENT	INDIRECT WASTE	DESCRIPTION
WC 1	WATER CLOSET (ACCESSIBLE)	3/4"	–	4"	2"	–	KOHLER "HIGHLINE" NO. K–3949–TR, WHITE, ELONGATED BOWL, FLOOR MOUNTED, TANK TYPE, 1.28 GPF. PROVIDE CHURCH NO. 295SSCT OPEN FRONT SEAT, BOLT CAPS AND J.R. SMITH NO. 9230 BRONZE CLOSET RING ASSEMBLY. TOP OF SEAT TO BE 17"–19" A.F.F.
L 1	LAVATORY (ACCESSIBLE)	1/2"	1/2"	2"	1–1/2"	–	KOHLER "KINGSTON" NO. K–2005, WHITE, VITREOUS CHINA, WALL HUNG, 4" CENTERS, SUPPORT ARMS, COMPLETE WITH CHICAGO NO. 3600–E39VPAB, METERING FAUCET WITH 0.35 GPM AERATOR, CHICAGO NO. 337–CP OFF–SET GRID STRAINER. PROVIDE CHICAGO NO. 1006–ABCP LOOSE KEY STOPS AND RIGID SUPPLIES, DEARBORN NO. 750–3, CHROME PLATED 17 GA. L.A. PATTERN CAST BRASS P–TRAP WITH SECURED ESCUTCHEON AND TRUEBRO PREFORMED LAV GUARD 2 E–Z SERIES NO. 102 PIPE COVERS. SET TOP OF LAV AT +34" MAX.
EWC 1	ELECTRIC WATER COOLER (ACCESSIBLE)	3/4"	–	2"	1–1/2"	–	ELKAY NO. VRCTL8WSK, STAINLESS STEEL, WALL MOUNTED, DUAL HEIGHT, 8.0 GPH, COMPLETE WITH NO. VRCWS BOTTLE FILLING STATION, PLUG–IN TRANSFORMERS (115V–60Hz, 5 FLA), 1–1/2" O.D. WASTES, 1–1/2" PVC L.A. PATTERN P–TRAPS AND CHICAGO NO. 1017–ABCP LOOSE KEY STOP AND RIGID SUPPLY. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
FS 1	FLOOR SINK	–	–	2"	1–1/2"	–	CECO NO. 908–1–2". 12"x12"x8" DEEP, HALF–GRATE, NO–HUB WITH ALUMINUM DOME STRAINER.

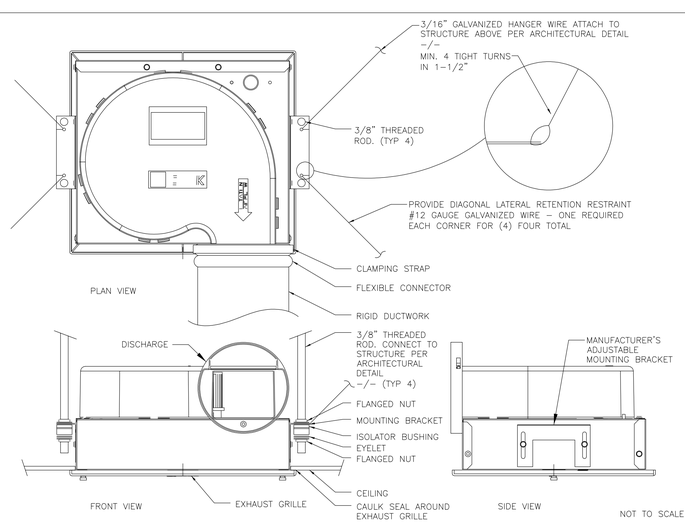
NOTES:
1.– THE ABOVE ITEMS SHALL BE PROVIDED AND INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2.– COORDINATE LOCATION AND ARRANGEMENT OF ACCESSIBLE FIXTURES WITH THE ARCHITECTURAL PLANS.
3.– MANUAL FAUCET CONTROLS AT LAVS/SINKS SHALL REQUIRE NO GREATER THAN 5 LBS. OF FORCE TO ACTIVATE CONTROLS.
4.– ALL FAUCET TRIM SHALL COMPLY WITH LATEST AB1953 REQUIREMENTS.
5.– THE ABOVE ITEMS SHALL COMPLY WITH THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE.

* PIPE MATERIAL SCHEDULE

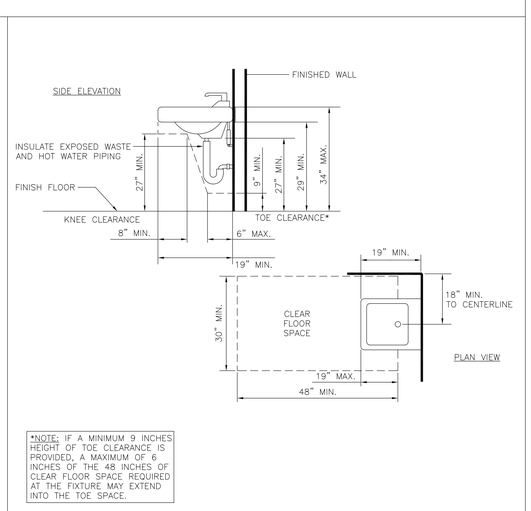
AG: ABOVE GRADE
BG: BELOW GRADE

SERVICES		C.I. NO–HUB	ABS PLASTIC SCH. 40	SCH 40 BLACK STEEL	SCH 40 GALV. STEEL	COPPER TYPE M	COPPER TYPE L	COPPER TYPE K	POLYETHYLENE (PE)	COPPER DWV	REMARKS
WATER	AG					●					IAPMO IS 3–2006
	BG						●				IAPMO IS 3–2006 WRAPPED
WASTE	AG	●									IAPMO IS 6–2006
	BG	●									IAPMO IS 6–2006
VENT	AG	●									IAPMO IS 6–2006
	BG	●									IAPMO IS 6–2006

* ALL PIPE MATERIAL SHALL BE OF DOMESTIC MANUFACTURER.



CEILING EXHAUST FAN INSTALLATION DETAIL (2)



A.D.A. SINK COMPLIANCE DETAIL (1)

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REGISTERED ENGINEER
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SUSSMAN MIDDLE SCHOOL
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DOWNEY UNIFIED SCHOOL DISTRICT

MECHANICAL – PLUMBING ABBREVIATIONS, SYMBOLS LIST, SCHEDULES AND DETAILS

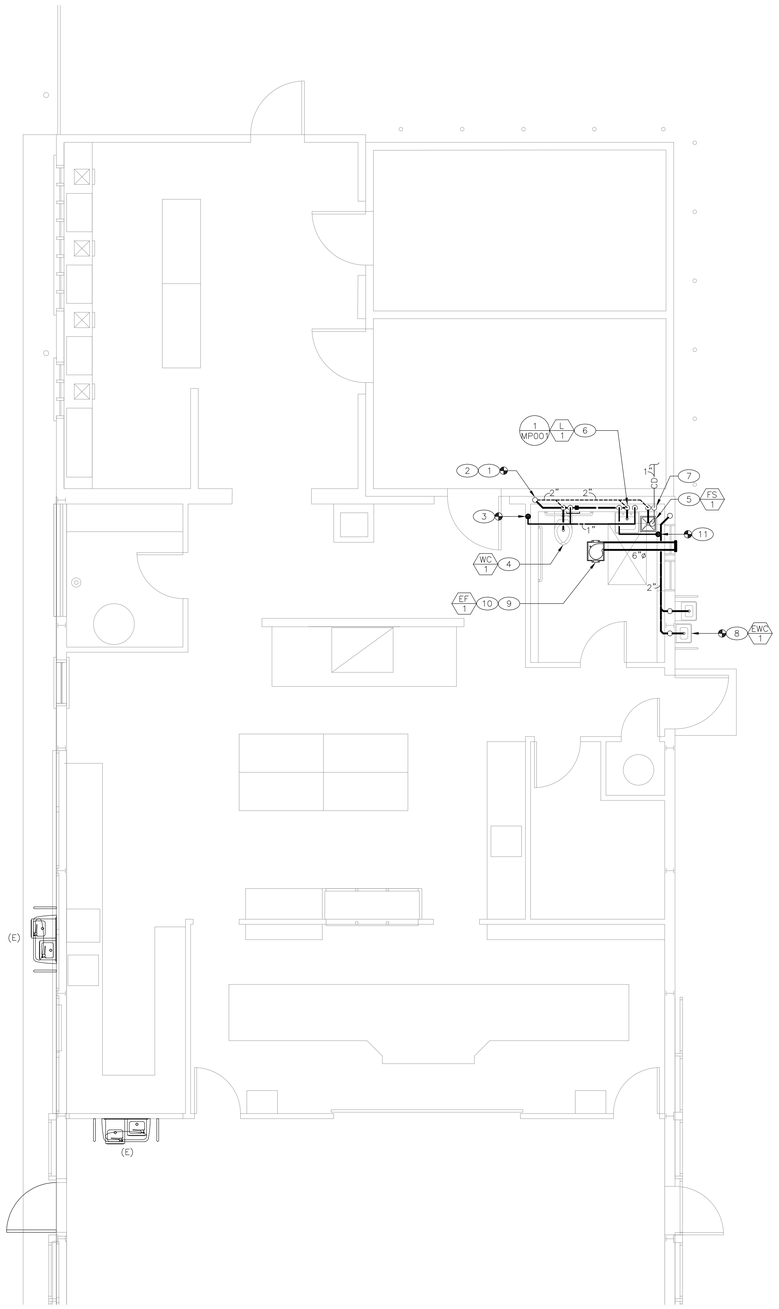
REVISIONS:
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Date: 11/10/2022
Job: 2204
Scale:
Drawn:

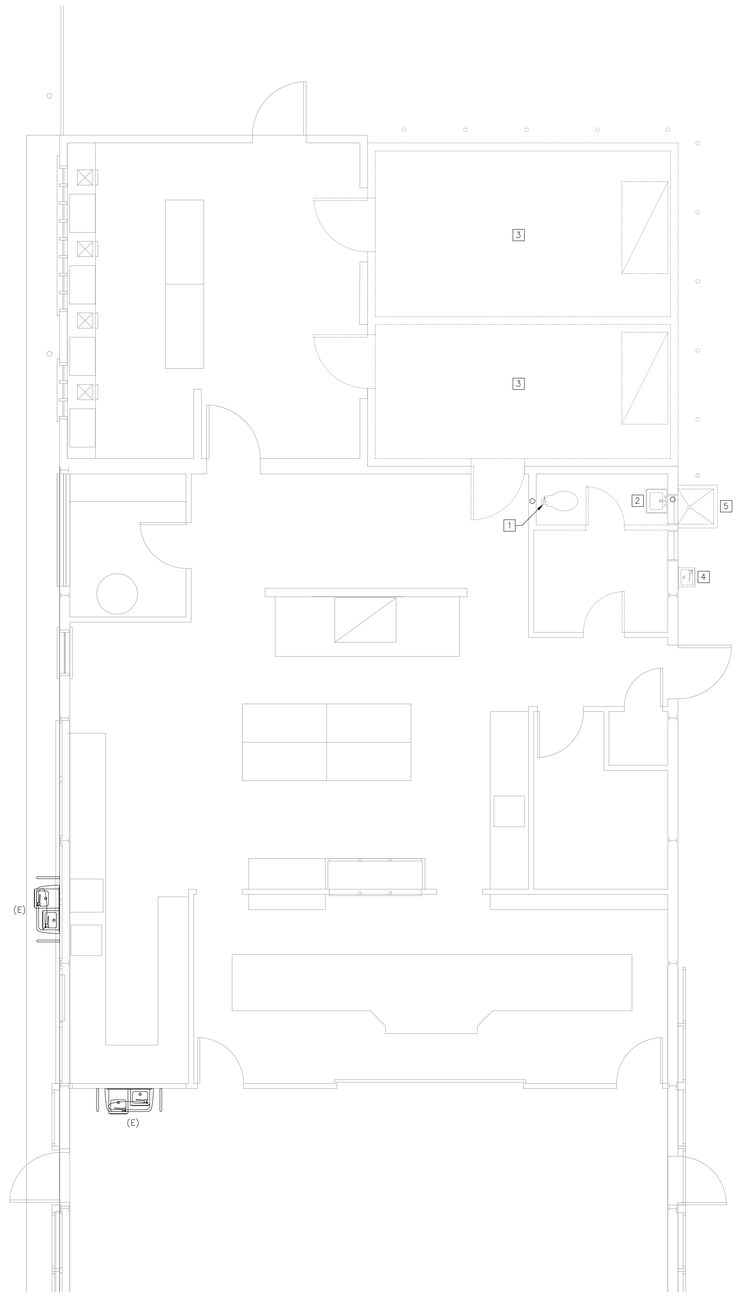
MP001

SHEET – OF XXX
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NOT FOR CONSTRUCTION



MECHANICAL - PLUMBING RENOVATION FLOOR PLAN | 2 | 1/4"=1'-0"



MECHANCIAL - PLUMBING DEMOLITION FLOOR PLAN | 1 | 1/4"=1'-0"

PLAN NOTES

1.– P.O.C.– 4" WASTE TO EXISTING WASTE BEL. FLR. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION. EXTEND SERVICE AS INDICATED. PATCH FLR. TO MATCH EXISTING.

2.– P.O.C.– 2" VENT TO EXISTING VTR ABV. CLG. FIELD VERIFY EXACT LOCATION AND SIZE PRIOR TO START OF WORK. EXTEND SERVICE AS INDICATED. PATCH CLG. TO MATCH EXISTING.

3.– P.O.C.– 1–1/4" CW TO EXISTING WATER SUPPLY ABV. CLG. FIELD VERIFY EXACT LOCATION AND SIZE PRIOR TO START OF WORK. EXTEND SERVICE AS INDICATED. PATCH CLG. TO MATCH EXISTING.

4.– PROVIDE 4" WASTE, 2" VENT AND 1" CW. EXTEND 3/4" CW TO WHA–1.

5.– PROVIDE 2" WASTE AND 1–1/2" VENT.

6.– PROVIDE 2" WASTE, 1–1/2" VENT AND 1/2" HW & CW.

7.– 1" CD DN. IN WALL AND DISCHARGE INTO FLOOR SINK WITH LEGAL AIR–GAP.

8.– P.O.C.– 2" WASTE, 1–1/2" VENT AND 3/4" CW TO EXISTING MODIFIED PIPING IN WALL. PATCH WALL TO MATCH EXISTING.

9.– CEILING MOUNTED EXHAUST FAN. SEE SCHEDULE AND DETAIL 2/MP001 FOR ADDITIONAL INFORMATION.

10.– 6"ø EA DUCT THROUGH EXTERIOR WALL. PROVIDE A 4x6 WALL GRILLE AT TERMINATION OF DUCT ON EXTERIOR WALL. PATCH WALL TO MATCH EXISTING. SEAL DUCT PENETRATION THROUGH EXTERIOR WALL WATER–TIGHT.

11.– P.O.C.– 3/4" HW TO EXISTING WATER SUPPLY ABV. CLG. FIELD VERIFY EXACT LOCATION AND SIZE PRIOR TO START OF WORK. EXTEND SERVICE AS INDICATED. PATCH CLG. TO MATCH EXISTING.

DEMOLITION NOTES

1.– EXISTING WATER CLOSET TO BE REMOVED. CAP VENT AND WATER SUPPLY IN WALL. CAP WASTE BEL. FLR. PATCH FLR. AND WALL TO MATCH EXISTING.

2.– EXISTING LAVATORY TO BE REMOVED. CAP WASTE AND WATER SUPPLY IN WALL. PATCH WALL TO MATCH EXISTING.

3.– DISCONNECT AND REMOVE EXISTING CONDENSATE DRAIN SERVING EACH COOLER BOX IN ITS ENTIRETY.

4.– EXISTING DRINKING FOUNTAIN TO BE REMOVED. REMOVE EXPOSED PIPING BACK TO SUPPLY AND CAP.

5.– EXISTING CAN WASH STATION TO BE REMOVED UNDER DIVISION 01. SEE ARCHITECTURAL DEMOLITION FLOOR PLAN FOR REQUIREMENTS.

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MECHANICAL – PLUMBING DEMOLITION AND RENOVATION FLOOR PLANS

REVISIONS:
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Date: 11/10/2022
Job: 2204
Scale:
Drawn:

MP101

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ABBREVIATIONS

A.C.C.	APPLICABLE CATEGORY CONTRACTOR	FIN.	FINISH FIXT FIXTURE	RND	ROUND
A.F.F	ABOVE FINISHED FLOOR	FLR	FLOOR FLUOR FLUORESCENT	RPPD	REDUCED PRESSURE PRINCIPLE DEVICE
A.P.	AIR PRESSURE	FPM	FOOT POUNDS PER MINUTE	S.O.V.	SHUT-OFF VALVE
ACR	AIR CONDITIONING REFRIGERATION	FRP	FIBERGLAS REINFORCED PLASTIC	SP	STATIC PRESSURE
ADA	AMERICAN DISABILITY ACT	FRZ	FREEZER	S/C	SELF CONTAINED
ADDT'L	ADDIONTAL	F.S.S.	FIRE SUPPRESSION SYSTEM	S/S	STAINLESS STEEL
ADJ.	ADJUSTABLE	FT	FOOT or FEET	SCHED	SCHEDULE
ALT.	ALTERNATE	G.C.	GENERAL CONTRACTOR	SECT	SECTION
ALUM.	ALUMINUM	G.M.	GAS METER	SHS	SINGLE HORIZONTAL SLIDE
AMPS.	AMPERES	GA.	GAUGE	SHT	SHEET
APPROX.	APPROXIMATE	GAL.	GALLON	SIM	SIMILAR
ARCH.	ARCHITECT	GALV	GALVANIZED	SL/SF	SOLID SURFACE
ASS'Y	ASSEMBLY	GPH	GALLONS PER HOUR	SMACNA	SHEET METAL AIR CONDITIONING NAT. ASSOC.
ATTACH.	ATTACHEMNT	GPM	GALLONS PER MINUTE	SNZ GD	SNEEZE GUARD
B.F.C.	BELOW FINISHED CEILING	H&C	HOT AND COLD WATER	SPEC	SPECIFICATIONS
B/C	BLOWER COIL	H.	HEIGHT	SQ FT	SQUARE FEET
BLDG	BUILDING	H.I.D.	HIGH INTENSITY DISCHARGE	STMR	STEAMER
BLK	BLOCKING	H.V.A.C.	HEATING/VENTILATING AND AIR CONDITIONING	SW	SWITCH
BPD	BACKFLOW PREVENTION DEVICE	HACCP	HAZARD ANALYSIS CRITICAL CONTROL POINT	SYM	SYMBOL
BRKT	BRACKET	HORIZ	HORIZONTAL	SYS	SYSTEM
BTU	BRITISH THERMAL UNTIS PER HOUR	HP	HORSE POWER	T.B.D.	TO BE DETERMINED
BWP	BUILDING WORKS PLAN	HTR	HEATER	T.C.	TRASH CAN
C.O.	CONVENIENCE OUTLET	HW	HOT WATER	TEL CO	TELEPHONE COMPANY
C.T.	CERAMIC TILE	I.D.	INSIDE DIMENSION	TEMP.	TEMPERATURE
C/E	CONDENSATE EVAPORATOR	I.E.	THEREFORE	TYP	TYPICAL
C/L	CENTER LINE	I.W.	INDIRECT WASTE	UBC	UNIFORM BUILDING CODE
C/T	COUNTER TOP	IN.	INCHES	UDS	UTILITY DISTRIBUTION SYSTEM
C/W	COMES WITH	INFO	INFORMATION	UL	UNDERWRITERS LABORATORY
CAB.	CABINET	INSUL	INSULATION	UMC	UNIFORM MECHANICAL CODE
CANT.	CANTILEVER	INT	INTERIOR	UPC	UNIFORM PLUMBING CODE
CFM	CUBIC FEET PER MINUTE	IPS	INTERNAL PIPE SIZE	UV	ULTRA VIOLET
CLG	CEILING	J-BOX	JUNCTION BOX	U/C	UNDER COUNTER
CLR	CLEAR	KW	KILOWATTS	VCT	VINYL COMPOSITION TILE
CMU	CONCRETE MASONRY UNIT	L.	LENGTH	VS	VERSUS
CO2	CARBON DIOXIDE	L/P	LAMINATED PLASTIC	VFD	VARIABLE FREQUENCY DRIVE
COL	COLUMN	LBS	POUNDS	W.	WIDTH
COMP'R	COMPRESSOR	LIN	LINEAR	W.G.	WATER GAUGE
COMP'T	COMPARTMENT	LOCN	LOCATION	W.H.	WATER HEATER
CONC	CONCRETE	LTS	LIGHTS	W.I.	WALK IN
CONN.	CONNECTION	MACH	MACHINE	W.I.C.	WIDTH IN CLEAR
CONT.	CONTINUOUS	MAT.	MATERIAL	W/	WITH
CONTR.	CONTRACTOR	MAX.	MAXIMUM	WGT	WEIGHT
CUST.	CUSTOM	MECH	MECHANICAL	W.P.	WATER PRESSURE
CW	COLD WATER	MFR	MANUFACTURER	X-BRC	CROSS-BRACING
D.	DIRECT	MIN	MINIMUM		
DM	DISH MACHINE	MISC	MISCELLANEOUS		
DBL	DOUBLE	MTD.	MOUNTED		
DEPT	DEPARTMENT	MUA	MAKE-UP AIR		
DET.	DETAIL	MULL	MULLION		
DIA	DIAMETER	N.A.	NOT AVAILABLE		
DIAG	DIAGONAL	NSF	NATIONAL SANITATION FOUNDATION		
DIM.	DIMENSION	NIFSEC	NOT IN FOOD SERVICE EQUIPMENT CONTRACT		
DISP.	DISPENSER	N.T.S.	NOT TO SCALE		
DIV.	DIVISION	N/A	NOT APPLICABLE		
DMH	DIELI MURAWKA HOWE	NAT	NATURAL		
DN	DOWN	No.	NUMBER		
DP	DEEP	OB	OPEN BURNER		
DPDT	DOUBLE PULL, DOUBLE THROW	O.C	ON CENTER		
DSA	DIVISION OF THE STATE ARCHITECT	O.D.	OUTSIDE DIAMETER		
DTA	DIAMOND TREAD ALUMINUM	OPNG	OPENING		
DWG	DRAWING	OSHPF	OFFICE STATE HEALTH PLANNING & DEVELOPMENT		
DWR	DRAWER	P.B.	PULL BOX		
E.	EXISTING	P.C.	PLUMBING CONTRACTOR		
E.C.	ELECTRICAL CONTRACTOR	PERF.	PERFORATED		
E.F.	EXHAUST FAN	PG	PAGE		
E.G.	FOR EXAMPLE	PH	PHASE		
EMT	ELECTRICAL METALLIC TUBING	PL	PLATE		
E.P.	ELECTRICAL PANEL	PREP	PREPARATION		
EA	EACH ELEV ELEVATION	PREV	PREVIOUS		
E.M.S.	ENERGY MANAGEMENT SYSTEM	PSF	POUNDS PER SQUARE FOOT		
EPH	ENVIRONMENTAL HEALTH PROTECTION	PSI	POUNDS PER SQUARE INCH		
EQ.	EQUAL	PT	POINT		
EQUIP	EQUIPMENT	PVC	POLY VINYL CHLORIDE		
ETC	ETCETERA	Q.D.	QUICK DISCONNECT		
EVAP	EVAPORATOR	Q.T.	QUARRY TILE		
EXH	EXHAUST	QT	QUART		
EXT	EXTERIOR	QTY	QUANTITY		
F.D.	FLOOR DRAIN	RAD	RADIUS		
F.J.	FIELD JOINT	RECOM'D	RECOMMENDED		
F.S.	FLOOR SINK	REFRIG	REFRIGERATOR		
F.S.E.C.	FOODSERVICE EQUIPMENT CONTRACTOR	REMOV	REMOVABLE		
F.T.	FLOOR TROUGH	REQD	REQUIRED		
F.T.D.	FAHRENHEIT TEMPERATURE DIFFERENCE	RLA	RUNNING LOAD AMPS		
FEWD	FOOD ESTABLISHMENT WASTEWATER DISCHARGE	RM	ROOM		

FOOD SERVICE SHEET LIST

FS-100	FOODSERVICE EQUIPMENT GENERAL NOTES
FS-101	FOODSERVICE REFERENCE PLAN
FS-102	FOODSERVICE EQUIPMENT FLOOR PLAN & SCHEDULE
FS-201	FOODSERVICE EQUIPMENT PLUMBING & ELECTRICAL PLAN
FS-301	FOODSERVICE EQUIPMENT BUILDING WORK & REFRIGERATION PLAN
FS-302	FOODSERVICE EQUIPMENT REFRIGERATION RACK DETAILS
FS-303	FOODSERVICE EQUIPMENT WALK-IN DETAILS
FS-401	FOODSERVICE EQUIPMENT CONSTRUCTION DETAILS
FS-402	FOODSERVICE EQUIPMENT ATTACHMENT DETAILS

(*) NOTE: THE FOLLOWING INFORMATION CAN BE FOUND ON THE BUILDING WORK PLAN: FLOOR DEPRESSIONS, LEVEL FLOORS; GALV. CURBS; WALL BACKING; HOOD OUTLINES, EXHAUST & MUA DUCTS; WALL & CEILING PENETRATIONS; WALL & WINDOW OPENINGS; FRP & S/S WALL FINISHES

ATTACHMENT NOTES

(MIN. REQUIREMENTS UNLESS NOTED OTHERWISE)

THESE GUIDELINES HAVE BEEN PREPARED FOR USE BY ENGINEERS, ARCHITECTS AND CONTRACTORS, APPROVING AUTHORITIES, AND OTHERS AS AN AID IN STANDARDIZING DETAILS OF CONSTRUCTION FOR SEISMIC RESTRAINTS OF FOOD SERVICE EQUIPMENT COMPLYING WITH THE 2019 CALIFORNIA BUILDING CODE (CBC). IT IS NOT TO BE CONSTRUED TO BE A DESIGN GUIDELINE. THE APPLICATIONS OF THE DETAILS CONTAINED HEREIN TO A SPECIFIC PROJECT ARE THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL. DIVISION OF THE STATE ARCHITECT (DSA) APPROVAL IS FOR ANCHORAGE ONLY. CONSTRUCTION OF EQUIPMENT MUST BE STRONG ENOUGH TO RESIST DESIGN FORCES.

THESE GUIDELINES WERE DEVELOPED USING SOUND ENGINEERING PRINCIPLES AND JUDGMENT. THEY REPRESENT REALISTIC AND SAFE DETAILS COMPATIBLE WITH GENERAL GUIDELINES AND FORCE FACTORS IN THE 2019 CALIFORNIA BUILDING CODE (CBC). THEY ARE SUBJECT TO REVISION AS FURTHER EXPERIENCE AND INVESTIGATION MAY SHOW IF NECESSARY. SMACNA ASSUMES NO RESPONSIBILITY AND ACCEPTS NO LIABILITY FOR THE APPLICATION OF THE PRINCIPLES OR TECHNIQUES CONTAINED IN THIS GUIDELINE.

1. - KITCHEN EQUIPMENT IS MANUFACTURED IN A MULTITUDE OF DIFFERENT SHAPES, SIZES, AND WEIGHTS. IN ORDER TO CODIFY THE VARIABLES, EQUIPMENT HAS BEEN ARRANGED INTO BASIC CATEGORIES OR TYPES; ALL EQUIPMENT WITHIN A CATEGORY HAS SIMILAR RESTRAINT REQUIREMENTS. DETAILS OF ANCHORAGE AND BRACING FOR EACH OF THE BASIC TYPES HAVE BEEN DEVELOPED. THE EQUIPMENT SHOWN IN THE INDEX IS NOT NECESSARILY A COMPLETE LIST, BUT THE LISTED EQUIPMENT DETAILS MAY BE USED AS A GUIDE FOR SIMILAR EQUIPMENT WITHIN THE RESTRAINTS INDICATED. THE PROJECT ARCHITECT/ENGINEER SHOULD BE CONSULTED IF THERE IS ANY DOUBT ABOUT RESTRAINT REQUIREMENTS, SO THAT ALLOWANCES FOR BRACING SYSTEMS MAY BE INCLUDED IN THE CONTRACT DOCUMENTS OR CONTRACTOR'S BID.

2. - ALL DETAILS IN THIS GUIDELINE ARE FOR EQUIPMENT THAT IS DIRECTLY CONNECTED TO UTILITIES. PLUG-IN TYPES ARE USUALLY EXCLUDED. THE EXCEPTION IS FREESTANDING CABINETS GREATER THAN FIVE FEET IN HEIGHT. THE DETAILS IN THE GUIDELINE SHOW AN ENTIRE ASSEMBLY.

3. - THE DETAILS HAVE BEEN PREPARED ON THE BASIS OF NEW CONSTRUCTION. THE SAME DETAILS ARE APPLICABLE TO REMODELING, PROVIDED THE SPECIFIED STRUCTURAL CAPACITIES OF THE EXISTING STRUCTURES, SUCH AS STUD WALLS, FLOORS, ETC., ARE EQUIVALENT SUBSTANTIATED.

4. - FINISHES INDICATED ON THE DETAILS ARE NOT INCLUDED IN THE KITCHEN EQUIPMENT CONTRACT.

5. - THE FOOD SERVICE EQUIPMENT CONTRACTOR SHALL PROVIDE LOCATION DRAWINGS FOR ALL EMBEDDED ITEMS AND WALL PLATES. THE GENERAL CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES AS THEY RELATE TO THE INSTALLATION OF KITCHEN EQUIPMENT.

6. - BACKING PLATES ON WALLS SHALL BE INSTALLED TO ENSURE A FLAT FINISHED WELL.

7. - CONCRETE ANCHORS WILL HAVE LOCAL-GOVERNING-JURISDICTION-APPROVED VALUES. CAST-IN-PLACE BOLTS, INSERTS, EXPANSION ANCHORS, OR HEAT-TREATED CONCRETE SCREWS MAY BE USED WHERE THE APPROVED LOADS ARE EQUAL TO OR GREATER THAN THE VALUES FOR THE SPECIFIED CONCRETE ANCHOR. THE STRUCTURAL ENGINEER SHOULD USE CAUTION WHEN USING THE SHALLOWEST ANCHOR IN THE APPROVED REPORTS BECAUSE IT MAY NOT PERFORM SATISFACTORILY WHEN SUBJECTED TO SEISMIC LOADS.

8. - ALL SCREWS INTO METAL FRAMING SHALL PENETRATE A MINIMUM OF 1/4" (6.4 MM) OR 5 PITCHED OF THREAD. ALL SCREWS INTO WOOD FRAMING SHALL PENETRATE A MINIMUM OF 1" (25.4 MM) UNLESS NOTED OTHERWISE.

BUILDING CONSTRUCTION NOTES

1. - REFER TO THE ARCHITECTS DRAWINGS AND SPECIFICATIONS FOR CURRENT BUILDING CODES

ELECTRICAL NOTES

1. - REFER TO THE ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS FOR CURRENT ELECTRICAL CODES AND ELECTRICAL NOTES

PLUMBING NOTES

1. - REFER TO THE PLUMBING ENGINEER'S DRAWINGS AND SPECIFICATIONS FOR CURRENT PLUMBING CODES AND PLUMBING NOTES

REFRIGERATION NOTES

(MIN. REQUIREMENTS UNLESS NOTED OTHERWISE)

1. - ANY DISCREPANCIES BETWEEN PLANS AND CODE REQUIREMENTS THAT MAY AFFECT THE INSTALLATION, FABRICATION, OR OVERALL WORK IN ANY WAY SHALL BE BROUGHT TO THE ATTENTION OF THE FOOD SERVICE EQUIPMENT CONTRACTOR IMMEDIATELY BY THE REFRIGERATION CONTRACTOR, BEFORE START OF CONSTRUCTION.

2. - FOOD FACILITY REQUIREMENT NOTES AND ALL OTHER NOTES ARE TO BE CONSIDERED A PART OF THESE NOTES. REFRIGERATION CONTRACTOR TO PROVIDE AS THEY APPLY.

3. - CONTRACTOR SHALL BE RESPONSIBLE THAT HIS PHASE OF WORK MEETS AND IS INSTALLED IN ACCORDANCE WITH STANDARDS REQUIRED BY ALL GENERAL, STATE, FEDERAL, AND ALL CODES PECULIAR TO MUNICIPALITY OR AREA WHERE JOB IS BEING INSTALLED INCLUDING DEPARTMENT OF HEALTH SERVICES REQUIREMENTS.

4. - CONTRACTOR TO VERIFY ALL SERVICES, SIZES, AND LOCATIONS REQUIRED FOR REFRIGERATION EQUIPMENT. PROVIDE AND INSTALL ALL COMPRESSORS, REMOTE ICE MACHINE CONDENSING UNITS, REFRIGERANT PIPING, VALVES, FITTINGS, GAUGES, INSULATION, ETC., ALL AS REQUIRED. FOR A COMPLETE WORKING SYSTEM, UNLESS NOTED OTHERWISE.

5. - CONTRACTOR SHALL SEAL ALL REFRIGERATION PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS. WATERTIGHT AND VERMIN-PROOF.

6. - ELECTRICAL SERVICE, CONTROL WIRING, AND CONNECTIONS TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

7. - REFRIGERATION COMPRESSOR(S) AND REMOTE ICE MACHINE CONDENSING UNIT(S) ARE TO BE LOCATED A MINIMUM OF TEN (10) FEET FROM COOKING EXHAUST FANS.

8. - REFRIGERATION COMPRESSOR(S) SHALL BE AIR COOLED, SEMI-HERMETIC TYPE WHERE POSSIBLE. BLOWER COILS SHALL BE VINYL DIPPED TYPE.

9. - CONTRACTOR TO PROVIDE & INSTALL INSULATED REFRIGERATION LINES IN WALLS AND/OR CEILINGS BEFORE THEY ARE CLOSED, AND FINISH SURFACE IS APPLIED.

10. - CONTRACTOR TO PROVIDE AND INSTALL SUPPORTS (TRAPEZE STYLE) FOR ALL OVERHEAD REFRIGERATION LINE RUNS.

FOOD FACILITY REQUIREMENTS NOTES

(MIN. REQUIREMENTS UNLESS NOTED OTHERWISE)

1. -A CONCRETE SLAB IS PROVIDED FOR TRASH, GARBAGE, AND GREASE CONTAINER. IF WALLS ENCLOSE AREA, THE INTERIOR WALL SURFACES WILL BE SMOOTH, SEALED AND WASHABLE (E.G., PLASTERED SMOOTH AND PAINTED, ETC.)

2. -ALL FOOD-RELATED AND UTENSIL-RELATED EQUIPMENT SHALL MEET OR BE EQUIVALENT TO SANITATION STANDARDS ESTABLISHED BY AN AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) ACCREDITED PROGRAM.

3. -ALL FLOOR MOUNTED EQUIPMENT WILL BE INSTALLED ON MINIMUM 6" SANITARY LEGS, CASTORS, OR COMPLETELY SEALED IN POSITIONED ON A 4-INCH HIGH CURB WITH CONTINUOUSLY COVED BASE. COUNTER TOP EQUIPMENT WILL BE ON 4-INCH SANITARY LEGS OR SEALED TO THE COUNTER UNLESS READILY MOBILE.

4. -NOT USED

5. -ANY OPENABLE WINDOWS, VENT OPENINGS OR OTHER SIMILAR OPENINGS MUST BE PROVIDED WITH TIGHT FITTING SCREENS OF MINIMUM 16-MESH TO THE INCH. WINDOWS TO BE FIXED AT FOOD PREP, UNTENSIL-WASHING, OPEN FOOD AND UTENSIL STORAGE AREAS.

6. -ALL EXTERIOR DOORS OPEN OUTWARD AND ARE SELF-CLOSING AND TIGHT FITTING.

7. -BI-FOLD, FRENCH, ACCORDION STYLE AND ROLL-UP DOORS CANNOT OPEN INTO THE FOOD PREP, UTENSIL WASHING OR UNPACKAGED FOOD SERVICE AREAS.

8. -TOILET ROOM DOORS AND DRESSING ROOM DOORS MUST BE SELF-CLOSING AND TIGHT FITTING.

9. -DELIVERY DOORS TO HAVE AIR CURTAIN FANS THAT SPAN THE WIDTH OVER THE DOOR. THE FAN MUST ACTIVATE VIA A MICROSWITCH PROVIDING A MINIMUM VELOCITY OF 1600 FPM MEASURED 3-FEET ABOVE THE GROUND.

10. -A MINIMUM OF 10 FOOT-CANDLES OF LIGHT MEASURED 30-INCHES OFF FLOOR IS PROVIDED IN WALK-IN REFRIGERATED STORAGE AND DRY STORAGE ROOMS AND AT LEAST 20-FOOT CANDLES IS PROVIDED WHERE FOOD IS PROVIDED FOR CONSUMER SELF-SERVICE, WHERE FRESH PRODUCE OR PREPACKAGED FOODS ARE SOLD OR OFFERED FOR CONSUMPTION; INSIDE EQUIPMENT SUCH AS REACH-IN AND UNDER-COUNTER REFRIGERATORS; IN AREAS USED FOR HANDWASHING, WAREWASHING, EQUIPMENT AND UTENSIL STORAGE, AND IN TOILET ROOMS.

11 . -A MINIMUM OF 50 FOOT-CANDLES OF LIGHT MEASURED 30-INCHES OFF FLOOR IS PROVIDED WHEN WORKING WITH FOOD OR WORKING WITH UTENSILS OR EQUIPMENT SUCH AS KNIVES, SLICERS, GRINDERS, OR SAWS WHERE EMPLOYEE SAFETY IS A FACTOR AND IN ALL AREAS DURING PERIODS OF CLEANING.

12. -SHATTERSHEILDS FOR ALL LIGHTS ABOVE FOOD PREPARATION, WORK, AND STORAGE WILL BE PROVIDED.

13. -ALL WAREWASHING SINKS TO HAVE THREE COMPARTMENTS THAT ARE A MINIMUM SIZE OF AT LEAST 18"x18"x12" DEEP (OR 16"x20"x12" DEEP) WITH A MINIMUM 18-INCH DRAINBOARD AT EACH END. IF AGAINST A WALL, IT MUST HAVE AN 8-INCH INTEGRAL BACKSPLASH. HOWEVER, IT MUST BE CAPABLE TO ACCOMMODATE THE LARGEST UTENSIL TO BE WASHED. A WAREWASHING MACHINE DOES NOT SUBSTITUTE FOR THE SINK REQUIREMENT.

14. -SINKS TO HAVE SPOUT(S) CAPABLE OF REACHING EACH COMPARTMENT.

15. -FOOD PREP SINK COMPARTMENT(S) TO BE AT LEAST 18"x18"x12" DEEP (OR 16"x20"x12" DEEP) WITH A MINIMUM 18-INCH DRAINBOARD. SEPARATE FOOD PREP SINKS TO BE PROVIDED FOR MEATS AND PRODUCE.

16. -THE THREE OR FOUR COMPARTMENT BAR SINK TO BE AT LEAST 12"x12"x10" DEEP (OR 10"x14"x10" DEEP) WITH A MINIMUM 18-INCH DRAINBOARD AT EACH END.

17. -A SEPARATE WET WASTE DUMP FIXTURE SHALL BE PROVIDED FOR DISPOSAL OF DRINK, WASTE ICE OR COFFEE WASTE.

18. -EACH HANDWASHING SINK MUST HAVE PERMANENTLY MOUNTED SINGLE-SERVICE SOAP & PAPER TOWEL DISPENSERS.

19. -THE HOT WATER HEATER WILL BE A COMMERCIAL TYPE CAPABLE OF CONSTANTLY SUPPLYING HOT WATER AT A TEMPERATURE OF 120°F TO ALL SINKS. IN SIZING THE WATER HEATER, THE PEAK HOURLY DEMAND FOR ALL SINKS, ETC., ARE ADDED TOGETHER TO DETERMINE THE MINIMUM REQUIRED RECOVERY RATE.

20. -ALL LAVATORIES OR HAND SINKS WILL HAVE A COMBINATION FAUCET OR PREMIXING FAUCET CAPABLE OF SUPPLYING WATER TEMPERED TO 100°F. SELF-CLOSING OR METERED FAUCET TO PROVIDE AT LEAST 15-SECONDS OF WATER WITHOUT REACTIVATION.

21 . -ALL PLUMBING, ELECTRICAL AND GAS LINES SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE TO AS GREAT EXTENT AS POSSIBLE. ALL EXPOSED CONDUITS, PLUMBING, ETC. SHALL BE INSTALLED AT LEAST 6-INCHES OFF FLOOR AND 3/4" FROM WALLS USING STANDOFF BRACKETS.

22. -CONDUIT, PLUMBING OR PIPING CANNOT BE INSTALLED ACROSS THE AISLE WAY, TRAFFIC AREA OR DOOR OPENING.

23. -MULTIPLE RUNS OR CLUSTERS OF CONDUIT OR PIPELINES SHALL BE FURRED IN OR ENCASED IN AN APPROVED SEALED ENCLOSURE.

24. -ALL LIQUID WASTE SHALL BE DRAINED BY MEANS OF INDIRECT WASTE PIPES INTO A FLOOR SINK. FLOOR SINKS ARE TO BE INSTALLED FLUSH WITH THE FINISH FLOOR SURFACE AND HAVE SUITABLE EASILY REMOVABLE SAFETY COVER GRATES.

25. -FLOOR SINK TO BE 50% EXPOSED WHEN NO ACCESS IS PROVIDED FOR CLEANING OR BE IN LINE WITH THE FRONT FACE OF ELEVATED FREESTANDING EQUIPMENT.

26. -APPROVED BACKFLOW PREVENTION DEVICES SHALL BE PROPERLY INSTALLED UPSTREAM OF ANY POTENTIAL HAZARD BETWEEN THE POTABLE WATER SUPPLY AND THE SOURCE OF CONTAMINATION. HOSES SHALL NOT BE ATTACHED TO A FAUCET OR HOSE BIBB UNLESS AN APPROVED BACKFLOW PREVENTER IS PROVIDED.

27. -WATER SUPPLY TO CARBONATORS SHALL BE PROTECTED BY AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER. THE RELIEF VALVE SHALL DRAIN INDIRECTLY TO SEWER WITH A LEGAL AIR GAP.

28. -FOR CLEANING FLOOR MATS, THE JANITORIAL SINK TO BE A MINIMUM 24" BY 36" FLOOR-MOUNTED TYPE. MOPS SHALL BE PLACED IN A POSITION THAT ALLOWS THEM TO AIR-DRY WITHOUT SOILING WALLS, EQUIPMENT, OR SUPPLIES.

29. -THE JANITORIAL SINK FAUCET WILL HAVE A THREADED OUTER LIP FOR HOSE ATTACHMENT AND AN APPROVED BACKFLOW PREVENTION DEVICE. NO CHEMICAL DISPENSING SYSTEMS OR SHUT-OFF VALVES TO BE ATTACHED TO MOP SINK FAUCET OUTLET (UNLESS A "SIDEKICK" PLUMBING DEVICE IS INSTALLED).

30. -NO CONDENSATE OR WASTEWATER INCLUDING HVAC WILL DRAIN INTO THE JANITORIAL SINK.

31 . -GREASE TRAP TO BE LOCATED OUTSIDE THE FOODSERVICE ACTIVITY AREA, FLUSH WITH THE FINISH FLOOR WHEN INDOORS. LOCAL WASTEWATER DISTRICT OR BUILDING DEPARTMENT TO BE CONTACTED FOR GREASE REMOVAL REQUIREMENTS.

32. -FLOOR DRAINS SHALL BE INSTALLED IN FLOORS THAT ARE WATER-FLUSHED FOR CLEANING AND IN AREAS WHERE PRESSURE SPRAY METHODS FOR CLEANING EQUIPMENT ARE USED, IN RESTROOMS, JANITORIAL ROOMS, SCULLERIES, AND AT BARS WITH WAREWASHING. FLOOR SURFACE IN AREAS PURSUANT TO THIS SHALL BE SLOPED 1:50 TO THE FLOOR DRAINS.

33. -ADEQUATE VENTILATION IS TO BE PROVIDED TO ALL TOILET ROOMS, JANITOR CLOSET WITH MOP SINKS, AND INDOOR TRASH ROOMS AND IN DRESSING/CHANGE ROOM(S).

34. -THE FLOOR FINISH WILL HAVE A SMOOTH SURFACE UNDER ALL EQUIPMENT AND THE WALKWAYS WILL HAVE A LIGHT TEXTURE ONLY.

35. -THE PAINT USED ON WALLS AND CEILINGS OF ALL KITCHEN, FOOD PREP, WORK, STORAGE AREAS WILL BE A GLOSS OR SEMI-GLOSS ENAMEL. FINISH MATERIAL SHALL BE A LIGHT COLOR IN FOOD PREP AREAS FOR EASY CLEANING.

36. -PRIOR TO INSTALLATION, SAMPLES OF FINISHES TO BE SUBMITTED TO ENVIRONMENTAL HEALTH FOR APPROVAL AS NEEDED.

37. -COLD STORAGE ROOMS SHALL BE PROVIDED WITH A SECTION OF SHELVING INSTALLED TO HOLD SHALLOW COOL DOWN PANS - NOT TO EXCEED 4-INCHES IN HEIGHT. SPACE BETWEEN SHELVING TO BE AT LEAST 8-INCHES HIGH.

38. -BACKUP DRY STORAGE SHELVING SHALL BE A MINIMUM OF 96 LINEAR FEET (MEASURED WITH TIERS) OR 25% OF KITCHEN, FOOD PREP, AND WORK AREAS, WHICHEVER IS GREATER. SHELVING SHALL BE AT LEAST 18-INCHES DEEP AND START A MINIMUM SIX-INCHES OFF THE FLOOR SURFACE.

39. -SHELVING OVER WET AREAS (SINKS, MOP SINKS, ETC.) AND FOOD SURFACES WILL BE METAL.

40. -ALL SEAMS, GAPS, OPENINGS TO BE PROPERLY SEALED.

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SUSSMAN MIDDLE SCHOOL
FOOD SERVICES
RENOVATION
12500 BIRCHDALE AVE, DOWNEY CA 90242
DOWNEY UNIFIED SCHOOL DISTRICT

FOODSERVICE EQUIPMENT GENERAL NOTES

REVISIONS:
1
2
3
4
5
6
7
8

Date:	11/03/2023
Job:	2204
Scale:	1" = 1'-0"
Drawn:	ANDREW DIANGELO

FS-100

SHEET	OF XXX
XREF:	

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PRC-E
This form is used to document any process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in 120.6/ 160.7 or prescriptive requirements in 140.9. This compliance document is used for newly constructed, addition and alteration projects.	
Project Name: Sussman Middle School food service renovation	**Report Page:** (Page 1 of 5)
Project Address: 12500 Birchdale Ave, Downey, CA 90242	**Date Prepared:** 2023-12-17T12:59:46-05:00

A. GENERAL INFORMATION

01	Project Location (city)	Downey	04	Total Conditioned Floor Area	430
02	Climate Zone	8	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

• School or Classroom

B. PROJECT SCOPE

This table includes process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in 120.6 / 160.7 or prescriptive requirements in 140.9.

My project consists of: (check all that apply):

01		02	
☒	Refrigerated Spaces <3,000 ft² Total (no Title 24, Pt6 requirements)	☐	Escalator & Moving Walkway Speed Controls (mandatory 120.6(g))
☐	Refrigerated Spaces >=3,000 ft² Total (mandatory 120.6(a))	☐	Computer Rooms (mandatory 120.6(j) and prescriptive 140.9(a))[1]
☐	Food /Beverage Stores >8,000 ft² cfa (mandatory 120.6(b))	☐	Commercial Kitchen Ventilation/Exhaust (prescriptive 140.9(b))[1]
☐	Enclosed Parking Garage Exhaust >=10,000 cfm (mandatory 120.6(c))	☐	Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive 140.9(c))[1]
☐	Newly Installed Process Boilers (mandatory 120.6(d))	☐	Pool/Spa (mandatory 110..4 / 160.7)
☐	Compressed Air Systems Combined HP >= 25 (mandatory 120.6(e))	☐	Controlled Environment Horticulture (mandatory 120.6(h))
☐	Elevator Lighting & Ventillation Controls (mandatory 120.6(f) / 160.7)	☐	New Steam Traps (mandatory 120.6(i))

[1] FOOTNOTES: These building features can comply using the performance method. If using the performance method for these features, compliance should be demonstrated on the NRCC-PRF-E.

Alert! Refrigerated Warehouses and refrigerated spaces that are less than 3,000 square feet do not have requirements under Title 24, Part 6 and therefore are not documented on the NRCC-PRC-E. Systems serving these spaces shall meet the requirements of the Appliance Efficiency Regulations for walk-in coolers or freezers contained in the Appliance Efficiency Regulations (California Code of Regulations, Title 20, Sections 1601 through 1608).

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PRC-E
Project Name: Sussman Middle School food service renovation	**Report Page:** (Page 2 of 5)
	Date Prepared: 2023-12-17T12:59:46-05:00

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through R. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Refrigerated Warehouse / Space 120.6(a) (See Table F)	Commercial Refrigeration 120.6(b) (See Table G)	Parking Garage Exhaust 120.6(c) (See Table H)	Process Boilers 120.6(d) (See Table I)	Compressed Air Systems 120.6(e) (See Table J)	Elevators 120.6(f) / 160.7 (See Table K)	Escalators & Moving Walkways 120.6(g) (See Table L)	Computer Rooms 140.9(a) (See Table M)	Commercial Kitchens 140.9(b) (See Table N)	Laboratory/ Factory Exhaust 140.9(c) (See Table O)	Controlled Environment Horticulture 120.6(h) (See Table P)	Steam Traps 120.6(i) (See Table Q)	Multifamily Pool/Spa 160.7 (See Table R)	**Compliance Results**
													COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. REFRIGERATED WAREHOUSES/SPACES

This section does not apply to this project.

G. COMMERCIAL REFRIGERATION

This section does not apply to this project.

Generated Date/Time: Documentation Software: Energy Code Ace

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance — Report Version: 2022.0.000 Schema Version: rev 20220101 — Compliance ID: 165624-1223-0002 Report Generated: 2023-12-17 09:59:49

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PRC-E
Project Name: Sussman Middle School food service renovation	**Report Page:** (Page 3 of 5)
	Date Prepared: 2023-12-17T12:59:46-05:00

H. ENCLOSED PARKING GARAGE EXHAUST

This section does not apply to this project.

I. PROCESS BOILER

This section does not apply to this project.

J. COMPRESSED AIR SYSTEMS

This section does not apply to this project.

K. ELEVATOR LIGHTING AND VENTILATION

This section does not apply to this project.

L. ESCALATORS AND MOVING WALKWAYS SPEED CONTROLS

This section does not apply to this project.

M. COMPUTER ROOM SYSTEM SUMMARY

This section does not apply to this project.

N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION

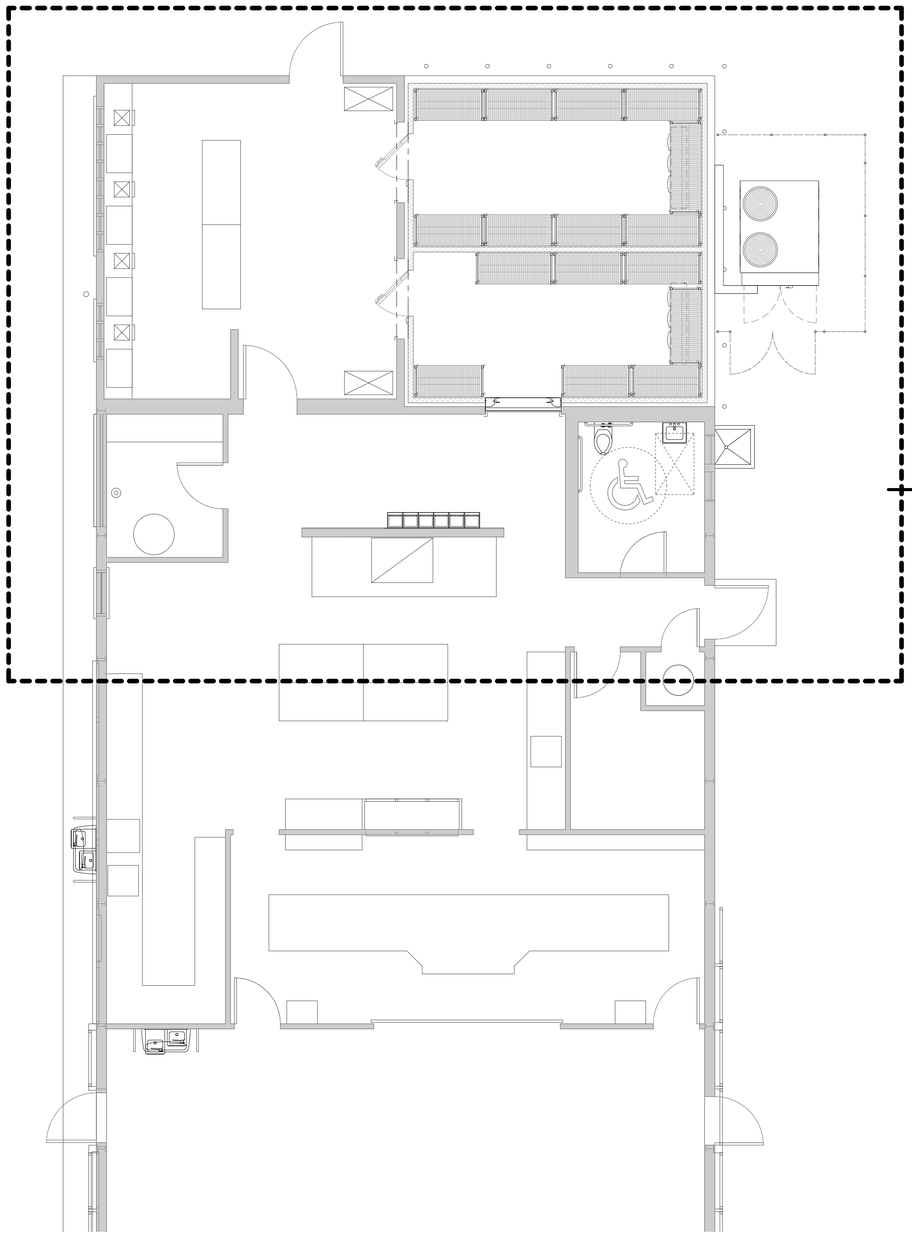
This section does not apply to this project.

O. LABORATORY AND FACTORY EXHAUST AND FUME HOODS

This section does not apply to this project.

Generated Date/Time: Documentation Software: Energy Code Ace

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance — Report Version: 2022.0.000 Schema Version: rev 20220101 — Compliance ID: 165624-1223-0002 Report Generated: 2023-12-17 09:59:49



1 FOODSERVICE REFERENCE PLAN
1/4" = 1'-0"

FS-102

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PRC-E
Project Name: Sussman Middle School food service renovation	**Report Page:** (Page 4 of 5)
	Date Prepared: 2023-12-17T12:59:46-05:00

P. CONTROLLED ENVIRONMENT HORTICULTURE

This section does not apply to this project.

Q. STEAM TRAPS IN INDUSTRIAL FACILITIES

This section does not apply to this project.

R. Pool & SPAs

This section does not apply to this project.

S. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-PRC-01-E - Covered Process

T. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no NRCA forms required for this project.

Generated Date/Time: Documentation Software: Energy Code Ace

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STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PRC-E
Project Name: Sussman Middle School food service renovation	**Report Page:** (Page 5 of 5)
Project Address: 12500 Birchdale Ave, Downey, CA 90242	**Date Prepared:** 2023-12-17T12:59:46-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Rand Nicholl	
Company:	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

Generated Date/Time: Documentation Software: Energy Code Ace

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FOOD SERVICES
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DOWNEY UNIFIED SCHOOL DISTRICT

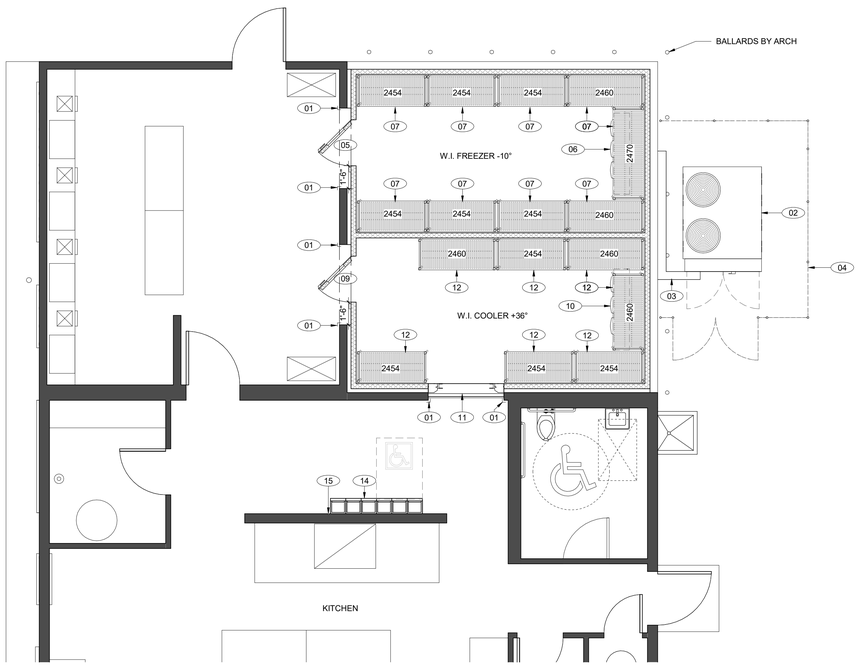
FOODSERVICE REFERENCE PLAN

REVISIONS:
1
2
3
4
5
6
7
8

Date:	11/03/2023
Job:	2204
Scale:	1/4" = 1'-0"
Drawn:	ANDREW DIANGELO

FS-101

SHEET OF XXX
XREF:



1 FOODSERVICE EQUIPMENT FLOOR PLAN
1/4" = 1'-0"

FLOOR PLAN LEGEND

- BUILDING WALLS (SEE ARCH. DWGS.)
- (123) ITEM NUMBER (SEE EQUIPMENT SCHEDULE)
- KITCHEN / A-100 ROOM/ AREA NAME AND ROOM NUMBER
- ACCESSIBLE CLEARANCES AND SYMBOL
- OUTLINE OF FOOD SERVICE EQUIPMENT
- 2442,1848 STORAGE SHELVING SIZES (Width x Length)
- FS-100 SHEET NUMBER
- WALK-IN COOLER/FREEZER INSULATED WALLS

FOOD SERVICE EQUIP. KEYNOTE

01 FOOD SERVICE EQUIPMENT IDENTIFIER
ITEM NUMBER

SEE EQUIPMENT SCHEDULE ON FS-102

NOTE: SEE SHEET FS-100 FOR FOOD FACILITY REQ'MT NOTES AND OTHER APPLICABLE NOTES

KITCHEN FINISH SCHEDULE

ROOM/AREA	FLOOR	BASE	WALLS	CEILING
WALK-IN COOLER	EPOXY FLOOR NOTE #5	EPOXY 6" HIGH WITH 3/8" RADIUS COVED	20 GA. WHITE SMOOTH GALV.	20 GA. WHITE SMOOTH GALV.
WALK-IN FREEZER	EPOXY FLOOR NOTE #5	EPOXY 6" HIGH WITH 3/8" RADIUS COVED	20 GA. WHITE SMOOTH GALV.	20 GA. WHITE SMOOTH GALV.
ALL OTHER ROOMS/AREAS	SEE ARCHITECTURAL DRAWINGS FOR FINISHES			

NOTE #5: ALL FLOORS WILL HAVE A SMOOTH SURFACE UNDER ALL EQUIPMENT, AND ALL WALKWAYS WILL HAVE A LIGHT TEXTURE ONLY

ITEM #	EQUIPMENT						PLUMBING / MECHANICAL							ELECTRICAL						
	DESCRIPTION	MANUFACTURER	MODEL #	QTY	ATTACH	WEIGHT	CW	HW	DW	IW	GAS	MBTU/ HR	PLUMBING REMARKS	VOLTS	LOAD K.W.	LOAD AMPS	LOAD H.P.	PHASE	ELEC. CONN.	ELECTRICAL REMARKS
01	CORNER GUARD & END CAPS	CUSTOM	CG-EC	6	4/FS-401															
02	REFRIGERATION RACK	COLDZONE	ET-1	1		1,670 LBS								208		50.0		3	D	FUZE SIZE = 50.0 AMPS; CONNECTED LOAD = 35.0 AMPS; MIN. AMPACITY = 39.3 AMPS SEE SHEET FS-302
03	S/S CHASE	CUSTOM	S/S	1																
04	EXTERIOR CHAIN LINK	NIFSEC	BY ARCH	1																
05	EXTERIOR WALK-IN FREEZER (REMOTE)	THERMALRITE	WIF	1										120		10.0		1	D	WIRE THRU LIGHTS, SWITCH & DRAIN LINE HEATERS & VACUUM RELIEF PORT. SEE SHEET FS-303 FOR ADD. INFO
06	FREEZER EVAPORATOR COIL	COLDZONE	CUSTOM	1	53/FS-402	85 LBS				1"			INSULTATED INDIRECT WASTE FROM EVAP COIL TO FLOOR SINK W/ 1.5" MIN AIR GAP	208		17.0		1	D	SEE DETAIL C/FS-302
07	FREEZER SHELVING UNITS (MOBILE)	METRO	NK3	9	MOB															
08	SPARE #			1																
09	EXTERIOR WALK-IN COOLER (REMOTE)	THERMALRITE	WIC	1										120		10.0		1	D	WIRE THRU LIGHTS, SWITCH & DRAIN LINE HEATERS & VACUUM RELIEF PORT. SEE SHEET FS-303 FOR ADD. INFO
10	COOLER EVAPORATOR COIL	COLDZONE	CUSTOM	1	53/FS-402	72 LBS				1"			INSULTATED INDIRECT WASTE FROM EVAP COIL TO FLOOR SINK W/ 1.5" MIN AIR GAP	120		9.6		1	D	SEE DETAIL C/FS-302
11	ROLL DOWN DOOR	RY-TEC	PREDADOOR NXT	1										*		*		*	*	REFER TO SHEET FS-303
12	REFRIGERATION SHELVING UNIT (MOBILE)	METRO	NK3	7	MOB															
13	SPARE #			1																
14	EMPLOYEE LOCKERS (1 ADA)	EXISTING	TO RELOCATE	6																
15	WALL BLOCKING	PROVIDED BY F.S.E.C.	CUSTOM	1																

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RENOVATION
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DOWNEY UNIFIED SCHOOL DISTRICT

FOODSERVICE EQUIPMENT FLOOR PLAN & SCHEDULE

REVISIONS:
1
2
3
4
5
6
7
8

Date: 11/03/2023
Job: 2204
Scale: As indicated
Drawn: ANDREW DIANGELO

FS-102

SHEET OF XXX
XREF:

ELECTRICAL SYMBOLS

- 120 VOLT 1Ø 8W LED LIGHT FIXTURE
- JUNCTION BOX
- SWITCH
- 120 VOLT 1Ø 36W LED HOOD OR W.I. LIGHT FIXTURE
- (1) ITEM NUMBER (SEE EQUIPMENT SCHEDULE)
- 123 ITEM NUMBER (SEE EQUIPMENT SCHEDULE)
- [1] KEYNOTE SYMBOL (SEE KEYNOTES BELOW)

ELECTRICAL KEYNOTES

1. DATA LINE TO SERVER VERIFY LOCATION WITH ELECTRICAL ENGINEER
2. TYPICAL WALK-IN BOX WIRING -SEE DETAIL 3/FS-401
3. REFRIGERATION RACK SEE SHEET A-101 FOR EXACT LOCATION

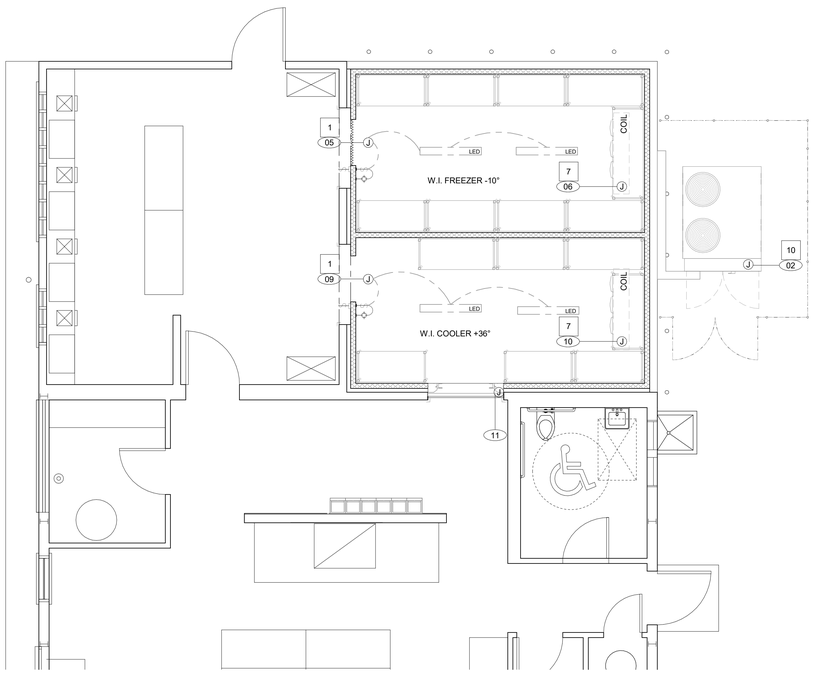
NOTE:
REFERENCE TO ELECTRICAL ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION

COLD ZONE

- [SM] SENSOR MODULE INSTALL AT 18" FROM WALK-IN CEILING PANEL
- [RGMS] REFRIGERANT GAS MONITORING SYSTEM INSTALL AT + 48" A.F.F. CENTER LINE MAX.

NOTE:
ALL CONDUIT TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND COORDINATED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR

NOTE: *SEE SHEET FS-100 FOR ELECTRICAL NOTES AND OTHER APPLICABLE NOTES*



(2) FOODSERVICE ELECTRICAL PLAN
1/4" = 1'-0"

PLUMBING SYMBOLS

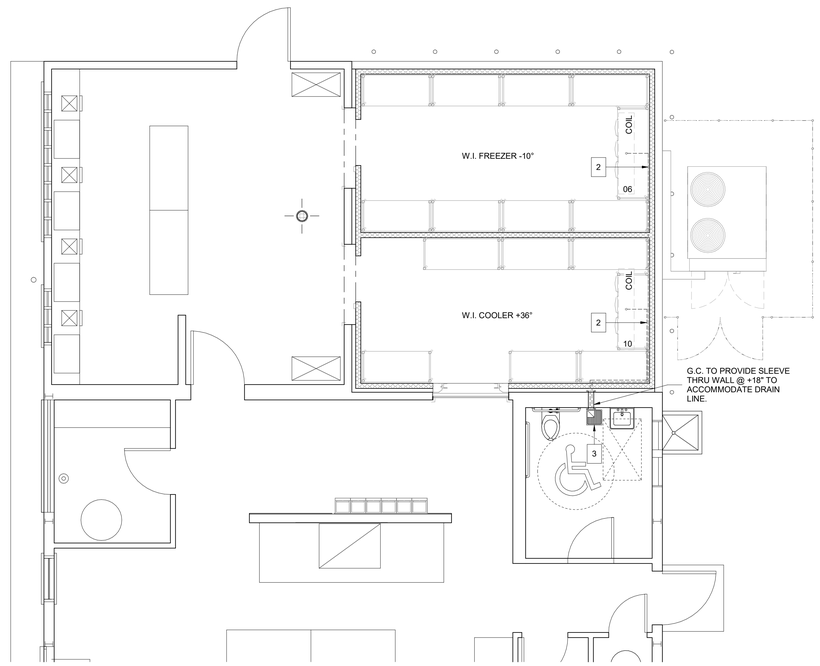
- INDIRECT DRAIN LINE TO FLOOR SINK
- FLOOR SINK
- FLOOR SINK (WITH 1/2 GRATE) WITH 1/2" MAX. GRATE SPACING ALL DIRECTIONS
- FLOOR SINK (WITH 3/4 GRATE) 1/2" MAX. GRATE SPACING ALL DIRECTIONS
- FLOOR DRAIN (WITH SLOPE PER CODE)
- (1) ITEM NUMBER (SEE EQUIPMENT SCHEDULE)
- [1] ITEM KEYNOTE

PLUMBING KEYNOTES

1. PLUMBING REQUIREMENTS FOR THESE AREAS TO BE VERIFIED WITH THE ARCHITECT AND/OR PLUMBING ENGINEER
2. DRAIN LINE FROM EVAP COIL TO FLOOR SINK (SEE DETAIL C/FS-302)
3. 12" x 12" x 6" DEEP FLOOR SINK

NOTE:
REFERENCE TO PLUMBING ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION

NOTE: SEE SHEET FS-100 FOR PLUMBING NOTES AND OTHER APPLICABLE NOTES



(1) FOODSERVICE PLUMBING PLAN
1/4" = 1'-0"

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RENOVATION
12500 BIRCHDALE AVE, DOWNEY CA 90242
DOWNEY UNIFIED SCHOOL DISTRICT

FOODSERVICE EQUIPMENT PLUMBING & ELECTRICAL PLAN

REVISIONS:
1
2
3
4
5
6
7
8

Date:	11/03/2023
Job:	2204
Scale:	As indicated
Drawn:	ANDREW DIANGELO

FS-201

SHEET OF XXX
XREF:

REFRIG PLAN KEYNOTES

1. REFRIGERATED EQUIPMENT AND/OR SYSTEM FOR ADDITIONAL INFO. SEE SHEET FS-302
2. REFRIGERATION LINES STUB-DOWN FROM CEILING THRU TO EVAP COIL - SEE DETAIL E/FS-302
3. REFRIGERATION RACK FOR REMOTE COMPRESSORS LOCATED (SEE SHEET FS-302) SEE SHEET A-101 FOR EXACT LOCATION
4. REFRIGERATION LINES RUN ABOVE CEILING LINE (UNISTRUT TRAPEZE OR SIMILAR), EXTEND FROM REFRIGERATION RACK LOCATION ON TO DROP-DOWN POINT AT WALL.

SM SENSOR MODULE
INSTALL AT 18" FROM WALK-IN CEILING PANEL

RGMS REFRIGERANT GAS MONITORING SYSTEM
INSTALL AT +48" A.F.F CENTER LINE MAX

NOTE:

ALL CONDUIT AND PULL BOXES WITH S/S COVERS TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND COORDINATED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR

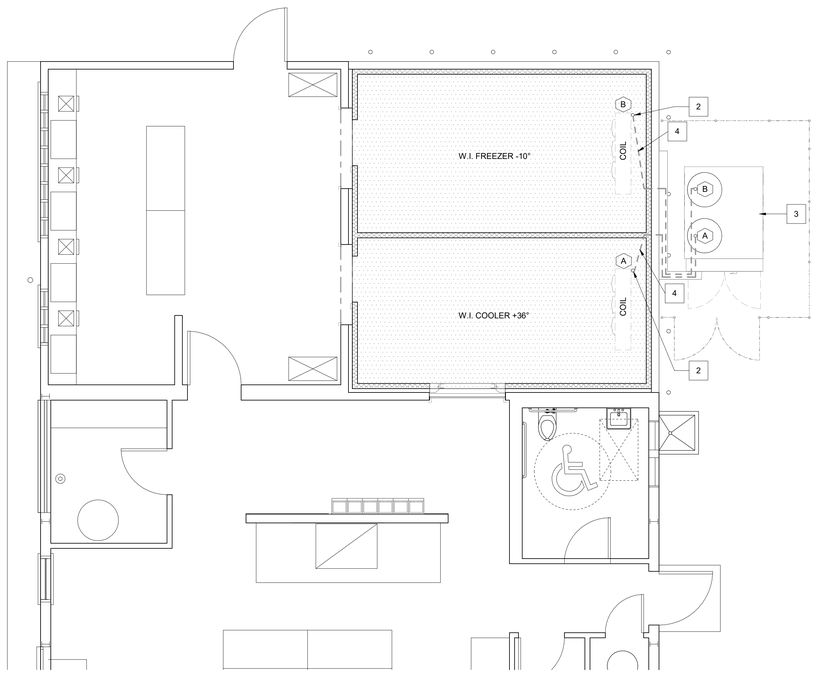
NOTE: *SEE SHEET FS-100 FOR REFRIGERATION NOTES AND OTHER APPLICABLE NOTES*

NOTE: *REFRIGERATION LINES ARE FOR GRAPHIC PURPOSES ONLY. IT IS NOT MEANT TO SHOW ROUTING.*

NOTE:
SEALED AND PRESSURIZED WITH 350 LBS. OF NITROGEN FOR 48 HOUR PERIOD. REFRIG. CONTRACTOR TO USE GAUGE TO VERIFY.

REFRIG. LEGEND

- REMOTE COMPRESSOR (ON REFRIGERATION RACK)
- (A) REFRIGERATION SYSTEM (SEE SCHEDULE ON SHEET FS-302)
- REFRIGERATION LINE (RUN FROM REFRIGERATION RACK)
- PVC CONDUIT TO STUB-DOWN AT HEIGHT INDICATED
- 1 KEYNOTE SYMBOL (SEE KEYNOTES BELOW)



2 FOODSERVICE REFRIGERATION PLAN
1/4" = 1'-0"

BUILDING WORK LEGEND

- WALL BACKING (14 GA. G.I.)
- WALL or WINDOW OPENING
- WALL OPENING (SLEEVE)
- FLOOR DEPRESSION
- WALK-IN INSULATED FLOOR (BY W.I. MFG.)
- WALK-IN COOLER (SLAB-ON-GRADE)
- FLOOR DRAIN
- STEEL KICKBASE OUTLINE
- FLOOR SINK AT STEEL KICKBASE OUTLINE
- 1 KEYNOTE SYMBOL (SEE KEYNOTES BELOW)

BUILDING WORK KEYNOTES

1. WALL BLOCKING - HEIGHT AS INDICATED SEE DETAIL 1/FS-401
2. FLOOR DEPRESSION @ WALK-IN BOX SEE DETAIL SECTIONS ON FS-303 & 5/FS-401
3. REFRIG. RACK'S PLATFORM ON (SEE SHEET FS-302) SEE SHEET A101 FOR EXACT LOCATION
4. STAINLESS STEEL END CAP, CORNER GUARD, AND WALL CAPS - SEE DETAIL 4/FS-401
5. CONCRETE PAD FOR REFRIGERATION RACK BY G.C. SEE ARCHITECTURAL/STRUCTURAL DRAWINGS
6. SUPPORT BY G.C. FOR UNIT - SECURE TO BUILDING STRUCTURE (VERIFY W/ARCHITECT/S.E.)
7. CHAIN LINK FENCE W/GATE BY G.C. SEE ARCHITECTURAL DRAWINGS
8. EPOXY FLOOR TO HAVE SMOOTH SURFACE UNDER ALL EQUIPMENT, AND ALL WALKWAYS TO HAVE A LIGHT TEXTURE ONLY.

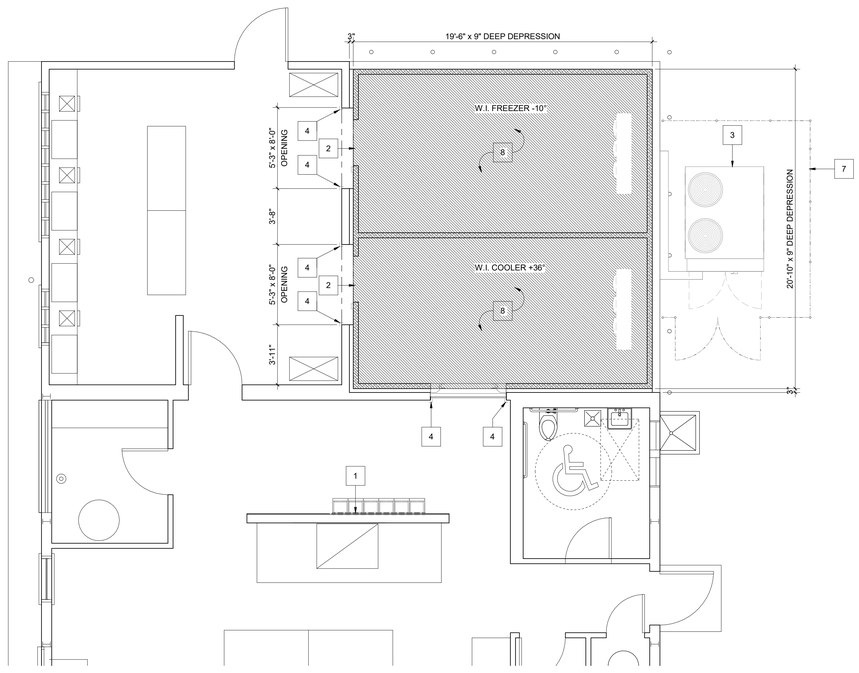
WALL BACKING LEGEND

WALL BACKING (PROVIDED BY F.S.E.C., INSTALLED BY G.C.) - ALL A.F.F. HEIGHTS ARE TO CENTERLINE OF 12" HIGH (OR PER ATTACHMENT DETAIL) WALL BACKING -

WALL BACKING TO BE VERIFIED AND COORDINATED BY FOOD SERVICE EQUIPMENT CONTRACTOR.

ALL WALL BACKING TO BE 14 GA. G.I. (OR PER ATTACHMENT DETAIL) & RUN FULL LENGTH OF EQUIPMENT ITEM.

NOTE: SEE SHEET FS-100 EXHAUST, BDLG, H.V.A.C NOTES & OTHER APPLICABLE NOTES



1 FOODSERVICE BUILDING WORK PLAN
1/4" = 1'-0"

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ARCHITECTURE
4591 SIRODAY AVENUE
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FOOD SERVICES
RENOVATION
12500 BIRCHDALE AVE, DOWNEY CA 90242
DOWNEY UNIFIED SCHOOL DISTRICT

FOODSERVICE EQUIPMENT BUILDING WORK & REFRIGERATION PLAN

REVISIONS:
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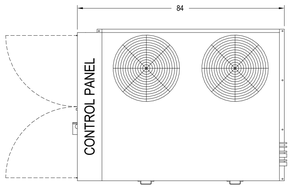
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Job:	2204
Scale:	As indicated
Drawn:	ANDREW DIANGELO

FS-301

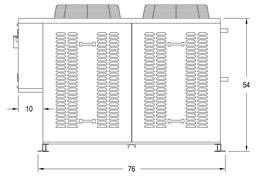
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A R-1 REFRIGERATION RACK OUTLINE DRAWING

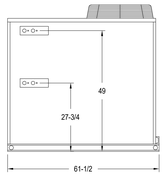
ENVIRO-THERM MODEL: ET-1



PLAN VIEW



FRONT VIEW



RIGHT SIDE VIEW

UL MEA

NOTES:
1. UNIT WEIGHT IS 1,670 LBS.
2. INSTALLATION CLEARANCE REQUIRES 3 FT. ON ALL SIDES

LINE SET SEQUENCE FACING UNIT

TOP ROW	A1	A2
BOTTOM ROW	B1	B2



COLDZONE ENGINEERING SUMMARY

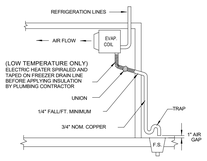
POWER SUPPLY: 208-230V/3PH/60HZ — FUSE SIZE: 50.0 AMPS

CONNECTED LOAD: 35.0 AMPS — MINIMUM AMPACITY: 39.3 AMPS

IDENT		FIXTURES					REFRIG. R-	COMPRESSORS						EVAPORATOR COILS										LINE SIZES			ACCESSORIES						
SYSTEM	ITEM	DESCRIPTION	FIXT.°F FIX T-	SU CT -	REQ'D FIXTURE BTU/H			MODEL NO.	H.P.	ELECTRICAL CHARACTERISTIC AT 60 HZ RLA	V	PH	MBH AT 100°F	DEFROST	QUANTITY	MODEL NO.	MFR.	FAN 1PH AMP	V	HEATER AMP	V	PH	TOTAL UNIT AMP [RLA]	ROUTE +	SUCTION	LIQUID	DEFROST OPTION	CRANKCASE HEATER	HEAD PRESS. CTRL	FURNISHED BY (SEE CODE) E/T-STAT	LLSV	TXVIE EV
																	REMARKS															
A1	10	EXTERIOR W I. COOLER #9	35	25	15662		448A	ZS15KAE	2.0	9.6	208	3	17.2	A	1	CL6A141ADARE	COLDZONE	2.4	115				9.6	S	7/8	1/2	KE2 OEM	FI	FI		FI	FI
A2		KE2 Lead/Lag (Redundant Off)	35	25			448A	ZS15KAE	2.0	9.6	208	3		A	1	CL6A141ADARE	COLDZONE	2.4	115					S	7/8	1/2	KE2 OEM	FI	FI		FI	FI
B1	6	EXTERIOR W I. FREEZER #5	-10	-20	15627		448A	ZF15K4E	5.0	17.0	208	3	15.1	E	1	CL6E142DDARE	COLDZONE	2.0	208	14.3	208	1	17.0	S	1 3/8	1/2	KE2 OEM	FI	FI		FI	FI
B2		KE2 Lead/Lag (Redundant Off)	-10	-20			448A	ZF15K4E	5.0	17.0	208	3		E	1	CL6E142DDARE	COLDZONE	2.0	208	14.3	208	1		S	1 3/8	1/2	KE2 OEM	FI	FI		FI	FI
ENVIRO THERM		(2) CONDENSER FAN MOTORS							3/4	3.4	208	3											6.8									

SYSTEM ITEM NO: LEGEND — A-AIR E-ELECTRIC G-GRAVITY(W/TIMER); O-OFF-CYCLE E*-DEFROST CLOCK BY FIXTURE MFR + S-SINGLE M-MAIN B-BRANCH — VERIFY LINE SIZES WITH JOB SITE CONDITIONS — MFR- FURNISH WITH FIXTURE; FI- CZ TO FURNISH AND SHIP LOOSE; FI- CZ TO FURNISH AND INSTALL ON UNIT; RC- FURNISH AND INSTALL BY REF. CONTRACTOR

C R-1 DRAIN LINE DETAIL

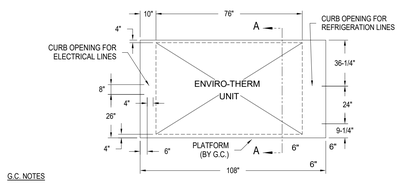


FOR COIL ATTACHMENT REFER TO DETAIL 53/FS-402

NOTES:

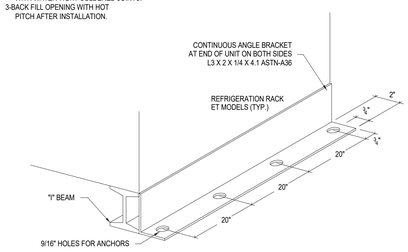
- ALL EVAPORATOR COILS WILL REQUIRE DEDICATED POWER FROM A HOUSE CIRCUIT
- EACH SYSTEM SUPPLIED WITH SUCTION LINE KIT INCLUDING A SUCTION LINE FILTER
- LOW TEMPERATURE SYSTEMS ARE SUPPLIED WITH SUCTION-LINE ACCUMULATOR
- EVAPORATOR FAN MOTORS PROVIDED WITH HIGH EFFICIENCY EC MOTORS
- ALL COMPRESSORS AND CONDENSER CIRCUITS ARE SIZED TO OPERATE AT 100° F AMBIENT
- EACH COMPRESSOR SYSTEM IS SUPPLIED WITH A CRANKCASE HEATER AND HEAD PRESSURE CONTROL
- TYPICAL PIPE SIZES BASED ON A MAXIMUM EQUIVALENT FEET OF 100' INCLUDING MAXIMUM VERTICAL RISE OF 35'

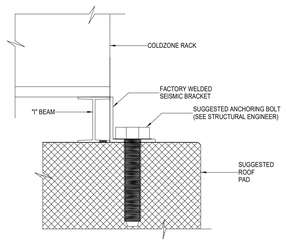
B R-1 SUGGESTED PAD DETAIL



G.C. NOTES

1-PLATFORM TO BE INSTALLED LEVEL.
2-PROVIDE SHEETMETAL HAT SECTION WITH WATER TIGHT SOLDERED JOINTS.
3-BACK FILL OPENING WITH HOT PITCH AFTER INSTALLATION.

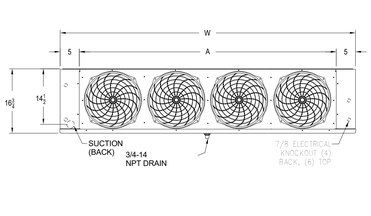


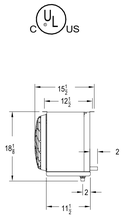


D R-1 COLDZONE EVAPORATOR COIL

LOW PROFILE

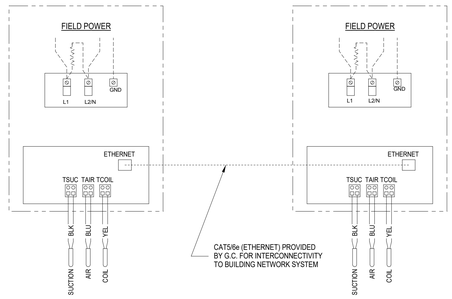
EVAPORATOR COIL(S) INCHES							
SYSTEM	ITEM NO.	MODEL NO.	QTY.	NO. OF FANS	A	W	WEIGHT (LBS. EACH)
A1	10	CL6A141ADARE	1	3	49 1/4	60 1/8	72
A2	10	CL6A141ADARE	1	3	49 1/4	60 1/8	72
B1	6	CL6E142DDARE	1	3	49 1/4	60 1/8	85
B2	6	CL6E142DDARE	1	3	49 1/4	60 1/8	85





E R-1 KE2 OEM WIRE DIAGRAM

LEAD/LAG



FOR MULTIPLE EVAP APPLICATIONS SCAN QR-CODE FOR BONDING/PAIRING SETUP INSTRUCTIONS

NOTES:
1. USE COPPER CONDUCTORS ONLY
2. UNIT MUST BE GROUNDED
3. FOR MOTOR AND HEATER AMPS SEE RATING ON OUTSIDE OF UNIT. ALSO SHOWN IN REFRIGERATION SCHEDULE ABOVE.
4. EVAPORATOR COIL(S) ARE POWERED DIRECTLY FROM BUILDING CIRCUIT BREAKER PANEL. NO INTER-WIRING REQUIRED BETWEEN COLDZONE CONTROL PANEL AND EVAPORATOR COIL(S).

FIELD-WIRING BY EC

ENGINEERING GUIDE TO SPECIFICATION
FOR REMOTE REFRIGERATION PACKAGE
ENVIRO-THERM REMOTE SYSTEM

THE REFRIGERATION PACKAGE SHALL BE A PRE-ENGINEERED AND FACTORY ASSEMBLED UNIT, TRADE NAME "ENVIRO-THERM", AS MANUFACTURED BY COLDZONE, A DIVISION OF HEAT TRANSFER PRODUCTS GROUP, 1933 VINEYARD AVE. ONTARIO, CA 91761. PHONE: (909) 786-3656, FAX: (714) 529-8503.

DEALER SHALL FURNISH AND INSTALL, WHERE SHOWN ON PLANS, (1) COLDZONE U.L. APPROVED "ENVIRO-THERM" AIR-COOLED REMOTE REFRIGERATION PACKAGE.

1. ENCLOSURE

THE FRAME SHALL BE MADE OF STRUCTURAL STEEL AND THE ENCLOSURE AND PANELS SHALL BE MADE OF HEAVY GAUGE CARBON STEEL. ENTIRE FRAME SHALL BE PRE-ASSEMBLED, WELDED, CLEANED AND PAINTED WITH A PRIME COAT OF ZINC CHROMATE AND SHALL BE FINISHED WITH A COAT OF EPOXY BASED "ENVIRO-KOTE".

2. REFRIGERATION UNIT (ENVIRO-THERM)

A. THE ENVIRO-THERM REFRIGERATION UNIT SHALL BE PROVIDED WITH SINGLE STAGE HERMETIC SCROLL COPELAND COMPRESSORS, MULTI-CIRCUITED AIR-COOLED CONDENSER OPERATING WITHIN THE RECOMMENDED RANGE OF SUCTION AND DISCHARGE PRESSURE FOR WALK-IN COOLERS, FREEZERS & REFRIGERATED FIXTURES. EACH CIRCUIT OF THE MULTI-CIRCUIT CONDENSER SHALL BE SIZED FOR MINIMUM OF 20° F.T.D.
B. EACH COMPRESSOR UNIT SHALL BE EQUIPPED WITH COPELAND COMPRESSOR, LARGE PUMP DOWN CAPACITY RECEIVER WITH TWO SHUTOFF VALVES, LIQUID LINE DRIER, SIGHT GLASS, SUCTION AND DISCHARGE VIBRATION ELIMINATOR, HIGH-LOW PRESSURE CONTROL, CRANKCASE HEATER AND FLOOD BACK
HEAD PRESSURE CONTROL FOR LOW AMBIENT - ALL FACTORY ASSEMBLED.
C. ALL COMPRESSOR UNITS SHALL BE NEW AND FACTORY ASSEMBLED TO OPERATE WITH THE REFRIGERANT
SPECIFIED IN THE REFRIGERATION ENGINEERING SUMMARY SHEET.

3. PRE-PIPING

A. ALL TUBING SHALL BE SECURELY SUPPORTED AND ANCHORED WITH CLAMPS.
B. ALL REFRIGERANT LINES SHALL BE EXTENDED TO ONE SIDE OF THE PACKAGE IN A NEAT AND ORDERLY
MANNER.
C. ENDS OF LINES SHALL BE CAPPED AGAINST CONTAMINATION AFTER THE UNIT IS COMPLETED. THESE CAPPED ENDS ARE TO BE OPENED ONLY AT FINAL CONNECTION OF THE PACKAGE TO FIXTURES.

4. CONTROL PANEL

A. THE PACKAGE SHALL HAVE FACTORY MOUNTED AND PRE-WIRED CONTROL PANEL COMPLETE WITH INTERLOCKED MAIN FUSED DISCONNECT, COMPRESSOR CIRCUIT BREAKERS, CONTACTORS AND TIME CLOCKS WIRED FOR SINGLE POINT POWER CONNECTION.
B. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL MAIN POWER LINES TO PANEL, AND USE WIRE HARNESS WIRING FOR CONTROL AND DEFROST HEATER BETWEEN THE DEFROST CLOCK AND THE REFRIGERATION FIXTURES, ALL IN ACCORDANCE WITH THE WIRING DIAGRAM AND LOCAL CODES.

GENERAL NOTES

1. GENERAL CONTRACTOR

A. CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND COORDINATE WITH OTHER TRADES.
B. GENERAL CONTRACTOR SHALL PREPARE AND WEATHERPROOFING THE PLATFORM AND CURBED OPENINGS.

2. REFRIGERATION CONTRACTOR

A. THE COMPLETE SYSTEM SHALL BE EVACUATED WITH VACUUM PUMP.
B. ALL COPPER TUBING TO BE REFRIGERANT GRADE A.C.R. OR TYPE "L".
C. CHARGE, TEST, AND ADJUST EACH UNIT TO BE IN AN OPERATIONAL SYSTEM.
D. SILVER SOLDER AND/OR SIL-FOS SHALL BE USED FOR ALL REFRIGERANT PIPING. SOFT SOLDER IS NOT
E. ALL PIPING TO BE PRESSURE TESTED WITH NITROGEN AT 300 PSI. AFTER THE CONDENSING UNIT AND COIL HAVE BEEN CONNECTED, THE BALANCE OF THE SYSTEM SHALL BE LEAK TESTED WITH ALL VALVES OPEN.
F. REFRIGERATION CONTRACTOR TO PROVIDE AND INSTALL DRAIN LINE HEATER IN FREEZER TO BE CONNECTED BY ELECTRICAL CONTRACTOR

3. ELECTRICAL CONTRACTOR

A. ELECTRICAL CONTRACTOR TO PROVIDE POWER FROM REFRIGERATION PACKAGE AND CONNECT CONTROL AND DEFROST SYSTEM AS CALLED FOR IN THE WIRING DIAGRAM.
B. ELECTRICAL CONTRACTOR TO PROVIDE COLOR CODED SERVICE FROM TIME CLOCK AT THE REFRIGERATION PACKAGE TO THE EVAPORATOR IN THE FIXTURE FOR DEFROST.
C. ALL ELECTRICAL WIRING AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE WIRING DIAGRAM AND LOCAL CODES.

4. PLUMBING CONTRACTOR

A. PLUMBING CONTRACTOR TO PROVIDE HARD A.C.R. OR TYPE "L" COPPER DRAIN LINES FOR WALK-IN REFRIGERATOR AND FREEZER, PITCHED 1/4" PER FOOT OF RUN. IN FREEZER, UNHEATED DRAIN LINE MUST BE OUTSIDE OF FREEZER WALL TO PREVENT FREEZING. TRAP DRAIN LINE OUTSIDE OF REFRIGERATED SPACE TO AVOID ENTRANCE OF WARM AND MOIST AIR.
B. PLUMBING CONTRACTOR TO PROVIDE INDIVIDUAL DRAIN LINE FOR EACH EVAPORATOR UNLESS OTHERWISE CALLED FOR.
C. ALL PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH LOCAL CODES.

master dwg revised 18AUG17 (RG)

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GENERAL NOTES

IT IS THE INSTALLING CONTRACTORS RESPONSIBILITY TO FOLLOW ALL APPLICABLE CODES AND CURRENT REFRIGERATION INDUSTRY STANDARDS AND PRACTICES WHEN DETERMINING LINE SIZES, AND INSTALLING AND STARTING UP COLDZONE EQUIPMENT

EVAPORATOR AND PIPING SERVICE / ISOLATION VALVES ARE RECOMMENDED FOR PARALLEL AND MULTIPLEX SYSTEMS. THESE VALVES ARE TO BE SUPPLIED AND INSTALLED BY THE INSTALLING CONTRACTOR

REV	DESCRIPTION	DATE
0	INITIAL RELEASE	10/10/23

HTPG
ColdZone
1933 VINEYARD AVE. ONTARIO, CA 91761
(909) 786-3656 (714) 529-8503 FAX

Project Name and Address

SUSSMAN MIDDLE SCHOOL

DOWNEY, CA

NOT DRAWN TO SCALE

DRAWING NUMBER 22289	JOB NUMBER
DATE 10/10/23	SHEET NUMBER R-1
DRAWN BY CA	23-0943

RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504

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SUSSMAN MIDDLE SCHOOL
FOOD SERVICES
RENOVATION
12500 BIRCHDALE AVE, DOWNEY CA 90242
DOWNEY UNIFIED SCHOOL DISTRICT

FOODSERVICE EQUIPMENT REFRIGERATION RACK DETAILS

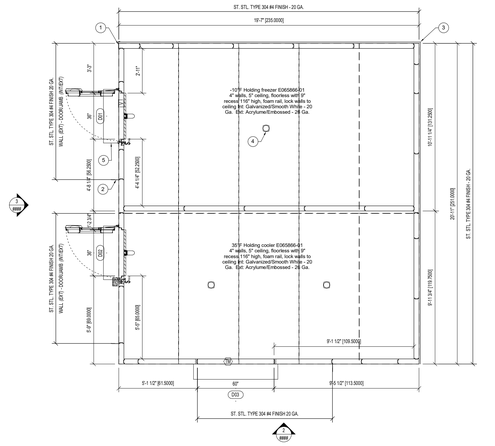
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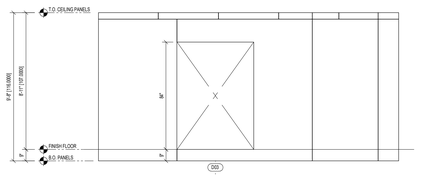
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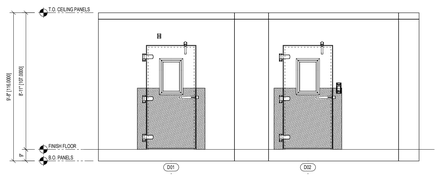
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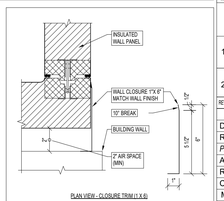
1 WALL & CEILING PANEL PLAN
Q-01 3/8"=1'-0" SPECIAL INTALL



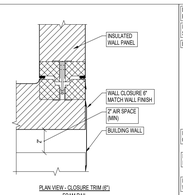


2 ELEVATION
Q-01 3/8"=1'-0" SPECIAL INTALL

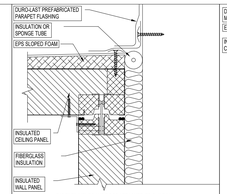
3 ELEVATION
Q-01 3/8"=1'-0" SPECIAL INTALL



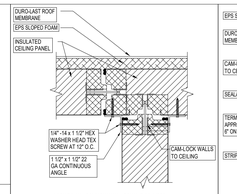
PLAN VIEW - CLOSURE TRIM (1 X 6) FOAM RAIL



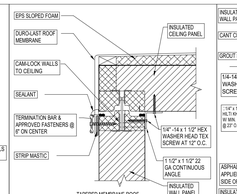
PLAN VIEW - CLOSURE TRIM (6") FOAM RAIL



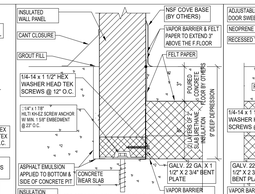
TAPERED MEMBRANE ROOF ATTACHED TO BUILDING FOAM RAIL

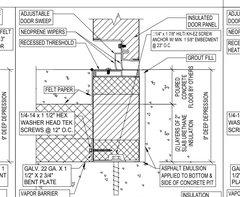


LOCK DOWN - COMMON WALL - EQUAL THICKNESS FOAM RAIL

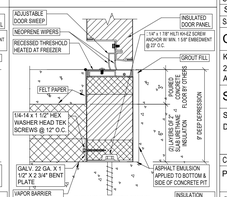


TAPERED MEMBRANE ROOF FOAM RAIL





FLUSH MOUNT COOLER DOOR W/ RECESSED THRESHOLD - FOAM RAIL



FLUSH MOUNT FREEZER DOOR W/ RECESSED THRESHOLD - FOAM RAIL

KEY NOTES

X		APPROVAL INITIALS
1	TRIM METAL: L SHAPED CLOSURE. LENGTH: 10'0". FINISH: 20GA GSN. VERIFY LOCATION	
2	TRIM METAL: FLAT CLOSURE. LENGTH: 8'0". FINISH: 20GA T304 #4 S/S. VERIFY LOCATION	
3	WAINSCOTING EXTERIOR: STAINLESS STEEL 304 #4 PVC 14 GA (4X10) - 48 INS HIGH	
4	LIGHT: 1852NL LED SAFETY NIGHT LIGHT - TYPICAL. VERIFY LOCATION	
5	RAIN HOOD - TYPICAL	

BOX DESCRIPTION

APPROVAL INITIALS

Box description: Cooler Item #09/Freezer Item #05 Combo

Dimensions:
External (O.D.): 19' 7" x 20' 11" x 9' 8" - w x d x h
Compartment 1 - Holding freezer:
Internal (I.D.): 18' 11" x 10' 3 1/4" x 9' 3" - w x d x h
Volume: 1688 ft³ / E065866-01
Compartment 2 - Holding cooler:
Internal (I.D.): 18' 11" x 9' 7 3/4" x 9' 3" - w x d x h
Volume: 1688 ft³ / E065866-01

Finishes
Walls: Galvanized/Smooth White - 20 Ga. & St. St. Type 304 #4 finish - 20 Ga. - interior
Acrylume/Embossed - 26 Ga. & St. St. Type 304 #4 finish - 20 Ga. - exterior
Ceilings: Galvanized/Smooth White - 20 Ga. - interior
Acrylume/Embossed - 26 Ga. - exterior

Panel Thickness
Walls: 4" UL Listed Class 1 Foam
Ceilings: 5" UL Listed Class 1 Foam

DOOR / OPENING SCHEDULE

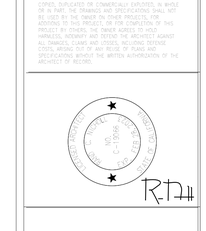
DXX APPROVAL INITIALS

Qty	Description	Qty	Description
	Door D01	1	Interior finish - St. St. Type 304 #4 finish - 20 Ga.
1	Exterior opening 36" x 80" hinged flush freezer door, 9" sill	1	Interior jamb finish - St. St. Type 304 #4 finish - 20 Ga.
1	Exterior finish - St. St. Type 304 #4 finish - 20 Ga.	1	Heated Jamb (4 Sided) W/ Threshold
1	Exterior jamb finish - St. St. Type 304 #4 finish - 20 Ga.	1	Kason 1705V-N Flow Heated Pressure Relief Port 5" (Kason 1833)
1	Threshold, Flawless Recessed Heated	1	Kick plate: 36" STAINLESS STEEL 304 #4 PVC 14 GA -
1	Gasket- Magnetic		exterior of jamb
1	Kick plate: 48" STAINLESS STEEL 304 #4 PVC 14 GA -	1	Latch - Kason 1236C - Chrome (Heavy Duty Locking
	exterior of jamb		Handle)
1	Door Closer - Kason 1094 Sureclose™ Hydraulic (Concealed Mounting)	3	Kason 1346 Hinge
1	Motion Detector	1	Magnetic Contacts (MC-1)
1	SMARTRITE™ Panic Switch	1	Light: 1926 Led 1/2DVO Fixture (Mid To Jamb) And Optic Globe (Shipped Loose)
1	Strip curtain	1	VIEWPORT-HEATED FRAME-HEATED GLASS 14" X 24"
1	Full Ram Hood (outdoor application over door)		
	Door D02	1	Interior finish - St. St. Type 304 #4 finish - 20 Ga.
1	Exterior opening 36" x 80" hinged flush cooler door, 9" sill	1	Interior jamb finish - St. St. Type 304 #4 finish - 20 Ga.
1	Exterior finish - St. St. Type 304 #4 finish - 20 Ga.	1	Threshold, Flawless Recessed Unheated
1	Exterior jamb finish - St. St. Type 304 #4 finish - 20 Ga.	1	Kick plate: 48" STAINLESS STEEL 304 #4 PVC 14 GA -
1	Gasket- Magnetic		interior and exterior of door
1	Kick plate: 48" STAINLESS STEEL 304 #4 PVC 14 GA -	1	Latch - Kason 1236C - Chrome (Heavy Duty Locking
	interior of jamb		Handle)
1	Door Closer - Kason 1094 Sureclose™ Hydraulic (Concealed Mounting)	3	Kason 1346 Hinge
1	Door Ajar Alarm - Door Monitor System	1	Motion Detector
1	Magnetic Contacts (MC-1)	1	SMARTRITE™ Panic Switch
1	Light: 1926 Led 1/2DVO Fixture (Mid To Jamb) And Optic Globe (Shipped Loose)	1	Strip curtain
1	VIEWPORT-HEATED FRAME ONLY 14" X 24"	1	Full Ram Hood (outdoor application over door)
	Openings		
1	Opening only, NCRO #2'W x 8'4"H, Opening only for Rytec Roll Up Door, 9" sill		

ACCESSORIES

APPROVAL INITIALS

6	Caulk - Silicone Grey (Tubes)	40	Caulk - Beige (Tubes)
52	Lock Wall Panels to Ceiling Panels (Factory Ceiling Caps - Standard)	12	Caulk - Silicone (White) (Tubes)
5	Trim metal - U-Shaped Closure. Length: 8'11". Finish: 20GA GSN	1	Trim metal - Flat Closure. Length: 8'0". Finish: 20GA T304 #4
5	Trim metal - U-Shaped Closure. Length: 9'0". Finish: 20GA GSN	1	Roof Cap: Dura-Last Tapered Wallmate - Mounted To Building. White. 40 Mil. Dim A = 21" T Dim B = 22" T1" Lap
1	EPS Sloped foam: Dim A=21" T Dim B=22" T1" Slope Direction=20' 11" , Freight allowed		Dim C = 1" Dim D = 1" Dim E = 1" Length = 100' Roll Sheet (1 rolls). Silicone (9 tubes) - Freight allowed
		1	FreezeDoor NXT High-Speed Rolling Door Variable speed motor, 3 HP, 230V/3PH, Includes: Integrated VFD controller Dual chamber, auto-reversing soft edge of bottom bar Two sets of thru beam photo eyes are standard Push button operator/emergency breakaway button bar to reset the door upon impact from either direction Door operator with self-diagnostic capabilities in NEMA 4X rated enclosure Pathwatch Safety System (2 sets) standard. 1 Door Panel - 60"wide X 84"high
41	Wainscoting Exterior: STAINLESS STEEL 304 #4 PVC 14 GA (4X10) - 48 ins high		
2	Vapor Proof Light Globe (Shipped loose)		
2	LAMP LED GU24 5K		
	Miscellaneous		1 Vinyl Panel
39	48"X96" EXTRUDED POLYSTYRENE SQUARE EDGE 60 PSI 2 X 4		1 Aluminum Window - Std
1	BARRIER VAPOR FELT, 3' X 144'		1 Single Source Transformer
1	Ceiling Attachment Tie Downs-Angles as per Thermarite Standard Product Spec 8700		1 Unshaded Blower with Supplemental Control Panel and Wall Brackets (Doors 5-7 FT)
1	10 ga S/S CANT at Exposed Entrance (Floor Level)		1 NEMA 4X STI 6 4 Control Box (Standard) 8.5" x 16.5"
			1 Motor Assembly System (2 Sets) 1 Aluminum Motor Cover mount Required
			3 Skirt Aluminum Hood 0".10"
			1 Fan Guard
			2 Polycarb Lights #SLC-000007898. - Freight allowed
		3	LIGHT: 1852NL LED SAFETY NIGHT LIGHT.
		2	LIGHT FIXTURE: 1926 VAPOR PROOF, LED GU24 BASE AND CLOSE
		13	ALIGNMENT STRIP FOR 4" FOAM RAIL (MT)
		1	PLASTIC 10 MIL 20' X 100' CLEAR
		5	ASPHALT EMULSION 4.75 GAL/BUCKET
		1	Lot of 4" x 3" x 14 ga x 4" w/(3) #10 Sheet Metal Screws & (2) 3/8" exp anchors for each 20 sq ft



REFERENCE SYMBOL LEGEND

ELEVATION REF. / DWG NUMBER
SECTION REF. / DWG NUMBER
DETAIL REF. / DWG NUMBER
DATUM POINT
KEY NOTE
DOOR TAG
JAMB GUARDS (Gamp Field)
DAIRY LIP (Gamp Field)
T-MOLDING (Gamp Field)
REVISION NUMBER

SITE NOTATION

WHEN APPLICABLE - DOES BUILDING FLOOR HAVE TILE AND GROUT INSTALLED BEFORE OR AFTER WALK-IN INSTALLATION IF SO PROVIDE TILE THICKNESS
ALLOW 2" FOR COOLER AND FREEZER MINIMUM AIR SPACE ALL AROUND WALK-IN FOR AMPLE AIR CIRCULATION

WARNINGS:

TO AVOID DOOR DAMAGE/WARPAGE - DO NOT ENERGIZE FREEZER DOOR HEATERS PRIOR TO STARTUP OF REFRIGERATION
TO AVOID ESCALATION OF METAL ON PANELS - PROPER VENTILATION MUST BE PROVIDED FOR CONDENSING UNIT

CONSTRUCTION (STANDARD)

CORNERS AND T-WALLS TO BE ONE PIECE CONSTRUCTION W/ 3/8" RADIUS AT ALL INSIDE VERTICAL CORNERS, JOINTS SEALED W/ PVC GASKET AT INT. & EXT. PERIMETER OF PANELS, CONNECTED W/ CAM-LOCK FASTENERS.
ALL CEILING AND WALL PANELS ARE NOT DESIGNED TO CARRY ADDITIONAL CONDENSING UNIT WEIGHT UNLESS SPECIFICALLY NOTED OTHERWISE AND DESIGNATED IN PLAN

ELECTRICAL NOTICE

ALL ELECTRICAL COMPONENTS WITHIN THE WALK-INS, I.E. LIGHT SWITCHES, PRESSURE RELIEF PORTS, JAMB HEATERS SHALL BE FACTORY PRE-WIRED, FOR HOOK UP BY ELECTRICAL CONTRACTOR.
ALL LIGHT FIXTURES SUPPLIED ARE SHIPPED LOOSE FOR INSTALLATION BY ELECTRICAL CONTRACTOR.
ThermaRite SHALL ACCEPT NO RESPONSIBILITY FOR ANY BACK CHARGES ASSOCIATED WITH INSTALLATION OF LIGHT FIXTURES OR FIELD WIRING CONNECTIONS.

CONCRETE SLAB / PAD NOTICE

SLAB / PAD MUST BE LEVEL WITHIN 1/4" OVER 10'-0" IN ANY DIRECTION.
SLAB / PAD MUST BE FLAT, SMOOTH, AND UNIFORM WITH MAXIMUM 1/4" TOTAL DEVIATION OVER 10'-0" STRAIGHTEDGE IN ANY DIRECTION.

I HEREBY ACKNOWLEDGE THAT I HAVE BEEN INFORMED OF THE ABOVE SLAB / PAD REQUIREMENTS AND FAILURE TO COMPLY WILL RESULT IN REFUSAL TO INSTALL AND/OR WILL VOID ANY WARRANTY COVERAGE FOR ISSUES ON THIS WALK-IN RESULTING FROM SUCH INSTALLATION.
X

REV	DESCRIPTION	DATE	BY
1	- REVISE DRAWING FORMAT - ADD RAIN HOOD AT PANEL OPENING (DXX) - ADD CANT CLOSURE	10.23.23	JTV
2	- RAIN HOOD ADDED FOR SWING DOORS	11.15.2023	SD

Approval Status Block
Drawing Reviewed By:
Review Date:
Please Check Appropriate Field
Approved as Drawn:
Revise and Resubmit:
Customer Service Rep.
MARIAN PORTILLO
Submittal Drafter | Shop Drafter
SD
Save Dwg Date: 10/17/2023

Customer/Dealer

KLH MARKETING INC
2120 E WINSTON RD
ANAHEIM, CA 92806

Site Information

SUSSMAN MIDDLE SCHOOL
DOWNEY CA

Create Dwg Date: 10/17/2023
Project # E065866-01
Sheet # Q-01

RAND NICHOLL
ARCHITECTURE
4591 SIRODAY AVENUE
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DOWNEY UNIFIED SCHOOL DISTRICT

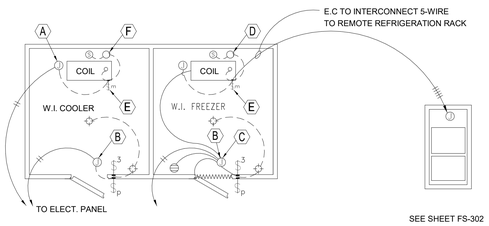
FOODSERVICE EQUIPMENT WALK-IN DETAILS

REVISIONS:
1
2
3
4
5
6
7
8

Date: 11/03/2023
Job: 2204
Scale: 1/4" = 1'-0"
Drawn: ANDREW DIANGELO

FS-303

SHEET OF XXX
XREF:



NOTE: ELECTRICAL CONTRACTOR (E.C.) TO WIRE FROM ROUGH-IN POINTS A, B, C, D, E & F TO ALL COMPONENTS OF WALK-IN ASSEMBLIES, INCLUDING COMPRESSORS, TO MAKE A COMPLETE & OPERABLE REFRIGERATION SYSTEM. E.C. TO MAKE SIDE PENETRATIONS FROM ROUGH-IN LOCATIONS TO EXTERIOR WALK-IN BOX AND PROVIDE PROPER FOAM SEALANT OF SAME PENETRATIONS (VERIFY SPECIFIC REQUIREMENTS WITH GENERAL CONTRACTOR). SEAL ALL SEAL-TIGHT CONDUIT AFTER ALL WIRES ARE PULLED.

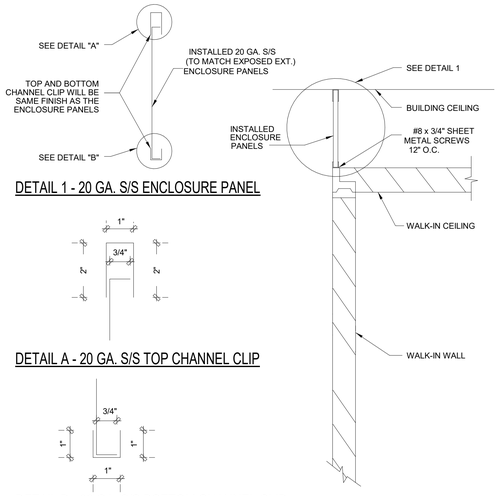
ELECTRICAL CONTRACTOR TO PROVIDE:

- (A) 120 VOLT/1 PHASE FOR COIL, SOLENOID AND THERMOSTAT.
- (B) 120 VOLT/1 PHASE FOR LIGHTS THRU SWITCHES-MOUNT LIGHTS IF SHIPPED LOOSE.
- (C) 120 VOLT/1 PHASE FOR FREEZER DOOR HEATER, CONDENSATE LINE HEAT TRACE AND HEATED VACUUM VENT.
- (D) 208 VOLT/1 PH FOR COIL, COIL HEATER, SOLENOID, AND THERMOSTAT. ALSO, 5-WIRE TO DEFROST TIMER AT REMOTE COMPRESSOR.
- (E) MOTOR RATED DISCONNECT BY E.C. (AS REQUIRED BY LOCAL CODES).
- (F) E.C. TO PROVIDE 120 VOLT/1 PHASE FOR SOLENOID AND THERMOSTAT.

NOTE: EXPOSED CEILING ELECTRICAL CONDUIT RUNS INSIDE WALK-IN BOX.

NOTE: E.C. TO WIRE THRU TO ALL THREE AND FOUR WAY SWITCHES PER ELECTRICAL ENGINEER'S PLANS AND SPECIFICATIONS.

3 TYPICAL EXTERIOR W.I. BOX WIRING DETAIL
1" = 1'-0"

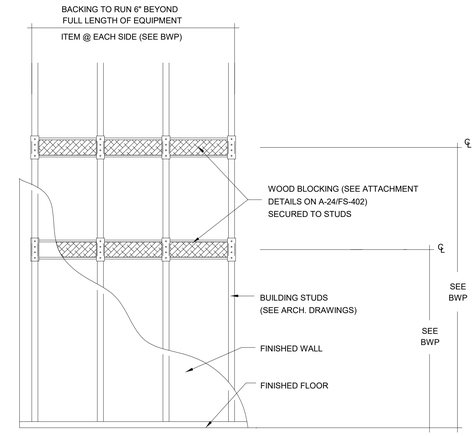


DETAIL 1 - 20 GA. S/S ENCLOSURE PANEL

DETAIL A - 20 GA. S/S TOP CHANNEL CLIP

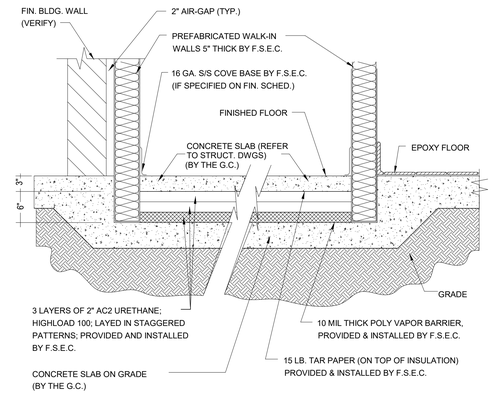
DETAIL B - 20 GA. S/S BOTTOM CHANNEL CLIP

2 18 GA S/S ENCLOSURE PANEL DETAIL
1" = 1'-0"



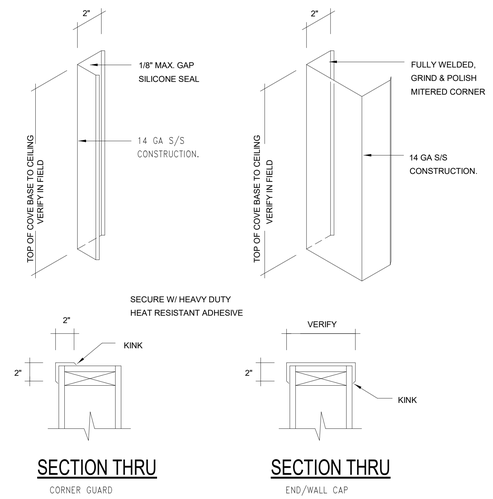
NOTE: WALL-BACKING TO BE VERIFIED AND COORDINATED BY THE F.S.E.C.

1 WALL BACKING DETAIL
1" = 1'-0"



NOTE: THE WALK-IN COOLER MUST HAVE A FLOOR THAT IS GRADED, SO THAT IT DRAINS TO THE OUTSIDE THROUGH A WASTE PIPE OR DOORWAY.

5 WALK-IN 9" DEEP DEPRESSION
1" = 1'-0"



4 S/S CORNER GUARD/END CAP/WALL CAP
1" = 1'-0"

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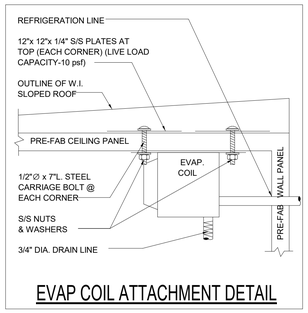
FOODSERVICE EQUIPMENT CONSTRUCTION DETAILS

REVISIONS:
1
2
3
4
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6
7
8

Date:	11/03/2023
Job:	2204
Scale:	1" = 1'-0"
Drawn:	ANDREW DIANGELO

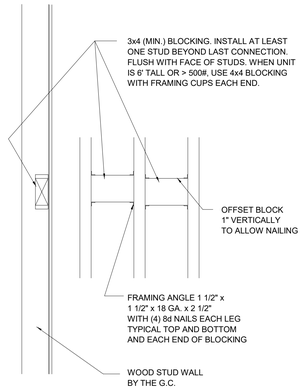
FS-401

SHEET OF XXX
XREF:



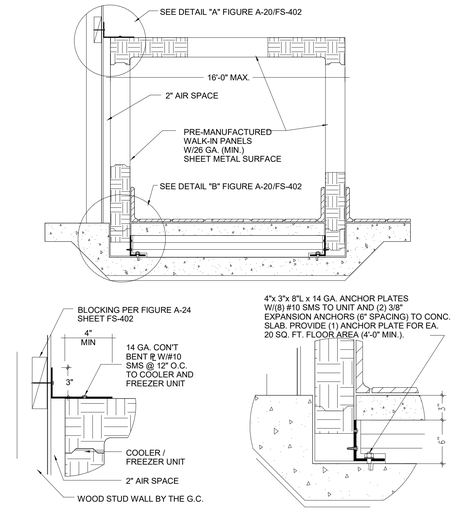
EVAP COIL ATTACHMENT DETAIL

53 A-53
1/2" = 1'-0"



CONNECTIONS TO WOOD

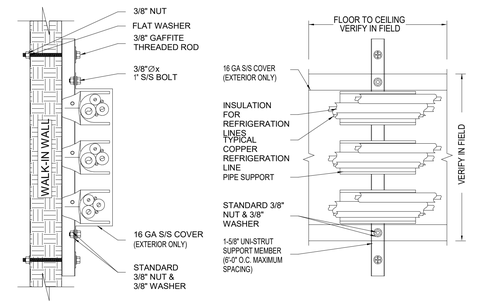
24 A-24
1/2" = 1'-0"



DETAIL 'A' DETAIL 'B'

20 A-20
1/2" = 1'-0"

NOTE:
ALL PENETRATION INTO THE WALK-IN PANELS ARE TO BE BACKFILLED WITH INSULATION FOAM & THEN PROPERLY SEALED AGAINST WATER PENETRATION



SIDE VIEW FRONT VIEW

62 A-62
1/2" = 1'-0"

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FOODSERVICE EQUIPMENT ATTACHMENT DETAILS

REVISIONS:
1
2
3
4
5
6
7
8

Date:	11/03/2023
Job:	2204
Scale:	1/2" = 1'-0"
Drawn:	ANDREW DIANGELO

FS-402

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XREF: