LA MESA-SPRING VALLEY SCHOOLS

LA MESA-SPRING VALLEY SCHOOL DISTRICT

Business Services Department

4750 Date Avenue
La Mesa CA 91942

BID NUMBER FB #22/23-008

La Mesa Arts Academy (LMAAC) - Kitchen Remodel

La Mesa-Spring Valley School District
Business Services Department
4750 Date Avenue
La Mesa CA 91942

EVENT	DATE
Advertisement Dates	Friday, 5/26/2023 and 6/2/2023
Job Walk	Monday 6/5/2023 - 9 AM at La Mesa Arts Academy School Site
Questions from Bidders Due (in writing)	Thursday, 6/8/2023 by 2:00 PM
Answers and Addenda Posted on District website	Friday, 6/9/2023 by 6:00 PM
Deadline to Submit Bid	**Wednesday, 6/14/2023 at 2:30 PM**
Recommendation for Award	**Wednesday, 6/14/2023 by 4:00 PM**
Deadline to Submit Challenges to Recommendation	6/14/2023 - 6/20/2023 by 4:00 PM
District Board Meeting to Approve Award of Contract	Tuesday, 6/20/2023
Contract Term Start Date	Date of NTP, planned for Wednesday, 6/21/2023
Contract Term Completion Date	Tuesday, 8/01/2023

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*To be responsive to this bid, these forms need to be completed and turned in with bid.

NOTICE TO CONTRACTORS CALLING FOR BIDS

NOTICE IS HEREBY GIVEN that La Mesa-Spring Valley School District, of San Diego County, California, acting by and through its Governing Board, hereinafter referred to as the District, will receive up to, but not later than **2:30 o'clock PM of the 14th day of June, 2023,** sealed bids for the award of contract;

LMAAC Kitchen Remodel
FB #22/23-008

Bids shall be received in the office of the **Business Services Department** of the District at 4750 Date Avenue, La Mesa, California 91942, and shall be opened and publicly read aloud at the above-stated time and place.

Each bid must conform and be responsive to the contract documents, copies of which are now available on the District website, at https://www.lmsvschools.org/purchasing-services/. Request bid documents from Robert Cochran, Director of Business Services at Robert.Cochran@LMSVschools.org.

Interested bidders should direct questions to Robert Cochran, Director of Business Services, at Robert.Cochran@LMSVschools.org. Any addendums and answers to questions will be posted on the District website on the date specified under Schedule in the Special Conditions section of the bid documents.

Bids must be submitted on the Bid form provided by the District and included in the bid documents. Each bid must strictly conform with and be responsive to this Notice Calling for Bids, the Information for Bidders, and other Contract Documents. The District reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding.

Except as provided in Public Contract Code Section 5100 *et seq*. no bidder may withdraw a bid for a period of sixty (60) calendar days after the opening of the bids.

In contracts involving an expenditure in excess of $25,000.00, the successful bidder shall file a payment bond issued by an admitted Surety approved to conduct business in the State of California approved by the District in the form set forth in the contract documents.*

Senate Bill (SB) 854 Requirements: No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid proposed only under Labor Code section 1771.1 (a)]. No contractor or subcontractor may be awarded a contract for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Prime contractors must add the DIR Registration Number for each of their listed subcontractors to the Designation of Subcontractors list AND submit a certification of registration for their own firm and those of their listed subcontractors upon request by the District. Failure of the bidding

NOTICE TO CONTRACTORS

prime contractors to list their subcontractors DIR registration Number on the Designation of Subcontractors list at the time of bid will result in rejection of their bid as non-responsive.

Refer to the following DIR Website for further information:
www.dir.ca.gov/Public-Works/PublicWorks.html

The Director of Industrial Relations has determined the GENERAL PREVAILING RATE OF PER DIEM WAGES in the locality in which this work is to be performed for each craft or type of worker needed to execute the contract which will be awarded to the successful bidder, copies of which are available to any interested party on request by contacting the Director of Industrial Relations, telephone number (415) 703-4774 or at www.dir.ca.gov.

It shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under him, to pay not less than the said specified rates to all workers employed by them in the execution of the contract.

The class of California contractor's license(s) required in order to bid on and perform the contract for this Project is: **B.**

The District may have made a finding that certain brand or trade names are necessary in order to maintain conformity among its campuses, compatibility with existing systems and to streamline maintenance and parts storage.

The successful bidder will be required to provide both a performance bond and a separate payment bond, each in an amount equal to 100% of the total contract amount. The forms of the bonds are set forth in the Contract Documents and all bonds must be issued by a California admitted surety as defined in California Code of Civil Procedure Section 995.120.

Robert Cochran
Director of Business Services
La Mesa-Spring Valley School District
District of San Diego County, California

*A payment bond must be filed for a contract involving an expenditure in excess of $25,000 (Civil Code section 3247 (a)) and may be required for contracts involving smaller expenditures at the option of the District.

END OF DOCUMENT

NOTICE TO CONTRACTORS
DOCUMENT 00100
INFORMATION FOR BIDDERS

1. **Preparation of Bid Form**

The District invites bids on the **attached** form to be submitted at such time and place as is stated in the Notice to Contractors Calling for Bids. All blanks in the bid form must be appropriately filled in, and all prices must be stated in both words and figures. If a different price is stated in words than is stated in figures, the price stated in words shall be the price bid. All bids must be submitted in sealed envelopes bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. It is the sole responsibility of the bidder to see that his bid is received in proper time. All bids received after the scheduled closing time for receipt of bids will be returned to the bidder unopened.

2. **Bid Security**

The bid security shall be given as a guarantee that the bidder shall execute the contract if awarded to him in conformity with the contract documents. Each bid must be submitted with the bid security required in document 00410 Bid Bond. Such security must be in one of the following forms: (1) A bidder's bond executed by an admitted surety insurer, made payable to the District. Any bond must have been issued by a California-admitted surety as defined in Code of Civil Procedure Section 995.120.

The bidder's security of the second and third lowest responsible bidders may be withheld until the contract has been finally executed. Within 10 days after the contract is awarded, their bidders' bonds shall be of no further effect as defined in Public Contract Code 10784.

3. Faxed and Electronic Mail Bids

All bids must be under sealed cover. District will not accept any bids or bid modifications submitted by facsimile or electronic mail transmission.

4. **Signature**

The bid must be signed in the name of the bidder and must bear the signature in longhand of the person or persons duly authorized to sign the bid.

5. **Modifications**

Changes in or additions to the bid form, recapitulations of the work bid upon, alternative proposals, or any other modification of the bid form which is not specifically called for in the contract documents may result in the District's rejection of the bid as not being responsive to the invitation to bid. No oral or telephonic modification of any bid submitted will be considered and a telegraphic modification may be considered only if the postmark evidences that a confirmation of the telegram duly signed by the bidder was placed in the mail prior to the opening of bids.

6. **Erasures/Mutilation of Bid Documents**

The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction is suitably authenticated by affixing in the margin immediately opposite the correction the surname or surnames of the person or persons signing the bid.
Contractors should not deface or mutilate the bid documents to the extent that they may not be usable for construction purposes.

INFORMATION FOR BIDDERS

7. Examination of Site and Contract Documents

Each bidder shall attend the mandatory job walk visit at sites to familiarize himself with the proposed work and fully acquaint himself with the conditions relating to the construction and labor so that they may fully understand the facilities, difficulties, and restrictions attending the execution of the work under the contract. Bidders shall thoroughly examine and be familiar with the drawings and specifications. The failure or omission of any bidder to receive or examine any contract documents, form, instrument, addendum, or other document or to visit the site and acquaint himself with conditions there existing shall in no way relieve any bidder from obligations with respect to his bid or to the contract. ~~The bidder is responsible to obtain any geotechnical and/or soils report pertaining to the site of the work.~~ Although any such report does not operate as a warranty or guarantee of site conditions, the submission of a bid shall be taken as prima facie evidence of compliance with all terms of this section.

7.1 Each bidder, by making his bid, represents that he has read and understands the Contract and Bid Documents and any and all related reports and information. After executing the Agreement, no consideration will be given to any claim of misunderstanding of the documents.

7.2 Each bidder, by making his bid, represents that he has visited the site, inspected the area of the work, and has familiarized himself with the local conditions under which the work is to be performed, including subsurface conditions. Such inspection shall specifically consider requirements for accessing the site and determining the work can be completed as required by, and as shown in, the Contract Documents.

7.3 With District's approval, including provision of insurance as required, and after scheduling access with the District, each bidder may conduct additional site investigations at the bidder's sole cost, by appointment only.

8. Withdrawal of Bids

Any bidder may withdraw his bid either personally, by written request, or by telegraphic request confirmed in the manner specified above at any time prior to the scheduled closing time for receipt of bids.

9. Agreements and Bonds

The Agreement form which the successful bidder, as Contractor, will be required to execute, and the forms and amounts of surety bonds which he will be required to furnish at the time of execution of the Agreement, are included in the contract documents and shall be carefully examined by the bidder. The required number of executed copies of the Agreement, the Performance Bond, and the Payment Bond for Public Works is as specified in the Special Conditions.

The Performance Bond must be executed by an admitted Surety approved to conduct business in the State of California which meets the highest standards the District is legally permitted to establish and which it has established.

The Payment Bond must be in the amount of 100 percent of the total amount payable. The Payment Bond must be executed by an admitted Surety approved to conduct business in the State of California which meets the highest standards the District is legally permitted to establish. Bonds shall be in the form set forth in the contract documents.

INFORMATION FOR BIDDERS

10. **Interpretation of Plans and Documents**

If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the drawings, specifications, or other contract documents, or other information pertaining to the site ~~(including any available soils or geotechnical report)~~ or finds discrepancies in, or omissions from the drawings and specifications, he is hereby required in accordance with Public Contract Code section 1104 to submit to the Architect, if applicable, or District a written request for an interpretation (RFI) or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the contract documents or other available information will be made available on the District's website. At the option of the District, all addendums may be mailed, delivered, faxed, made available for pick-up or sent via electronic mail. No oral interpretation of any provision in the contract documents will be made to any bidder. Numbers spelled out in words will take precedence over numerals / figures.

11. **Bidders Interested in More Than One Bid and Bidders Not Qualified to Bid**

No person, firm, or corporation shall be allowed to make, or file, or be interested in more than one bid for the same work unless alternate bids are specifically called for. A person, firm, or corporation that has submitted a sub proposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a sub proposal or quoting prices to other bidders or making a prime proposal. No person, firm, or corporation shall be allowed to bid who has participated in the preparation of contract specifications; a bid by such a person, firm or corporation shall be determined to be unresponsive.

12. **Award of Contract**

The District reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding. The award of the contract, if made by the District, will be to the lowest responsive and responsible bidder.

13. Additive and Deductive Items: Method of Determining Lowest Bid

Pursuant to Public Contract Code section 20103.8, should this bid solicitation include additive and/or deductive items, the checked [X] method shall be used to determine the lowest bid:

__[X]__ (a) The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

_____ (b) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in the numerical order set forth in the bid form, **by site location**.

_____ (c) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in order from a specifically identified list of those items that, when in the bid form and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the District before the first bid is opened.

_____ (d) The lowest bid shall be determined in a manner that prevents any information that would identify any of the bidders from being revealed to the public entity before the ranking of all bidders from lowest to highest has been determined.

If no method is checked, sub-paragraph (a) shall be used to determine the lowest bid.

Notwithstanding the method used by the District to determine the lowest responsible bidder, the District retains the right to add to or deduct from the contract any of the additive or deductive items included in the bid solicitation.

14. **Evidence of Responsibility**

Upon the request of the District, a bidder whose bid is under consideration for the award of the contract shall submit promptly to the District satisfactory evidence showing the bidder's financial resources, his construction experience in the type of work being required by the District, and his organization available for the performance of the contract and any other required evidence of the bidder's qualifications to perform the proposed contract. The District may consider such evidence before making its decision awarding the proposed contract. Failure to submit requested evidence of a bidder's responsibility to perform the proposed contract may result in rejection of the bid.

15. **Listing Subcontractors**

Each bidder shall submit with his sealed bid a list of the proposed subcontractors on this project as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code section 4100 and following). Forms for this purpose are furnished with the contract documents.

16. **Senate Bill (SB) 854 Requirements**

No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid proposed only under Labor Code section 1771.1 (a)]. No contractor or subcontractor may be awarded a contract for a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Prime contractors must add the DIR Registration Number for each of their listed subcontractors to the Designation of Subcontractors list AND submit a certification of registration for their own firm and those of their listed subcontractors upon request by the District. Failure of the bidding prime contractor to list their subcontractors DIR Registration Number on the Designation of Subcontractors list at the time of bid will result in rejection of their bid as non-responsive.

17. Workers' Compensation

In accordance with the provisions of section 3700 of the Labor Code, Contractor shall secure the payment of compensation to his employees. Contractor shall sign and file with the District the following certificate prior to performing the work under this contract:

> 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.

The form of such certificate is included as part of the contract documents.

INFORMATION FOR BIDDERS

18. **Substitution of Security**

Monies withheld by the District to ensure performance under the contract may be released in accordance with Public Contract Code section 22300 and the contract documents.

19. **Contractor's License**

If, at the time the bids are opened, the bidder is not licensed to perform the project in accordance with division 3, chapter 9 of the Business and Professions Code of the State of California (Section 7028.15) and the Notice to Contractors Calling for Bids, the bid will not be considered.

20. **Storm Water Permit for Construction Activity**

~~It shall be the responsibility of the successful bidder to file a Notice of Intent and procure a State Water Resources Control Board (State Water Board) National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity (Permit). The successful bidder shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) prior to initiating work. The successful bidder shall be responsible for procuring, implementing and complying with the provisions of the Permit and the SWPPP, including the standard provisions, monitoring and reporting requirements as required by Permit and as required by Article 69 of the General Conditions It shall be the responsibility of all bidders to evaluate and include in the bid the cost of procuring the Permit and preparing the SWPPP as well as complying with the SWPPP and any necessary revisions to the SWPPP. The successful bidder shall also include in his bid the cost of monitoring as required by the Permit.~~

~~Where applicable to the work of this contract, District shall make available to Contractor a copy of the State Water Resources Control Board (State Water Board) National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity (the "Permit"). Contractor shall obtain the Permit from District prior to bidding on this contract. District shall also provide Contractor with a copy of the Storm Water Pollution Prevention Plan (SWPPP) at least two weeks prior to the opening of bids~~. Contractor shall be responsible for implementing and complying with the provisions of the District's MS-4 SWPPP Permit and the SWPPP pursuant to Article 69 of the General Conditions hereof, including requirements specified in other parts of the contract documents. It shall be the Contractor's responsibility to evaluate and include in the bid the cost of compliance with the SWPPP and the cost of monitoring as required by the Permit. Contractors are responsible for implementing the District's SWPPP during the course of work.

21. **Ethics in Bidding.**

The District expects the bidders to maintain high ethical standards in engaging in the competitive bidding process. The bid amount of one bidder should not be divulged to another before the award of the subcontract or order, nor should it be used by Contractor to secure a lower proposal from another bidder on that project (bid shopping). Subcontractors or Suppliers should not request information for the Contractor regarding any sub-bid in order to submit a lower proposal on that project (bid peddling). District will consider any bidder found to be engaging in such practices to be a non-responsible bidder and may reject its bid on that ground.

INFORMATION FOR BIDDERS

22. Substitutions and Special Brand Names

In accordance with Public Contract Code section 3400 "prior to or after the award of the contract", the District must provide for "submission of data substantiating a request for a substitution of 'an equal' item." Therefore, no later than thirty-five (35) days after award of the contract, if the bidder is requesting substitution of "an equal" item or product or work, the make and grade of the item, product or work which is to be substituted shall be provided to the District representative. The documentation submitted must include any and all illustrations, specifications, and other relevant data including catalog information which describes the substituted item or product or work and substantiates that it is an "or equal" to the specified item or product or work. In addition, the submittal documentation must also include a statement of the cost implications of the substitution being requested stating whether and why the substitution will reduce or increase the contract price. The documentation submitted must also include information regarding the durability and life cycle cost of the substituted item, product or work. Substantiating data shall include a signed affidavit from the Contractor stating that the substituted item or product or work is equivalent to the specified item or product or work in every way except as listed on the affidavit. Whenever possible, the same substitution information is to be included in the sealed bid submittal package. Failure to submit all the needed substantiating data, including the signed affidavit, may result in a determination that the bid is nonresponsive. BIDDERS ARE SPECIFICALLY NOTIFIED THAT THE SUBMISSION OF THIS DOCUMENTATION IN NO WAY OBLIGATES THE DISTRICT OR IT'S REPRESENTATIVE TO REVIEW SUCH DOCUMENTATION PRIOR TO CONTRACT AWARD. FURTHERMORE, IF A PROPOSED SUBSTITUTION IS REJECTED, BIDDER SHALL BE RESPONSIBLE TO PROVIDE THE ITEM OR PRODUCT OR WORK AS ORIGINALLY SPECIFIED AT NO ADDITIONAL COST TO THE DISTRICT. DISTRICT HAS THE COMPLETE AND SOLE DISCRETION TO DETERMINE IF AN ITEM OR ARTICLE IS AN EQUAL ITEM.

23. Fingerprinting

By law it is the District's responsibility to determine whether a contractor must provide fingerprint certification. Pursuant to Education Code section 45125.2, the District considers the totality of the circumstances in order to determine if fingerprinting of employees of a contractor working on a school site is required. Factors to be considered include the length of time the contractor's employees are on school grounds, whether students are in proximity with the location where the contractor's employees are working, and whether the contractor's employees are working alone or with others. **A determination regarding whether fingerprint certification is required is contained in the special conditions.**

INFORMATION FOR BIDDERS

24. Labor Compliance Program.

This contract is / is not [X] subject to a labor compliance program, as described in subdivision (b) of Section 1771.5 of the Labor Code. If this contract is subject to the requirements of Section 1771.7 of the Labor Code, the District is required to initiate and enforce a labor compliance program, as described in subdivision (b) of Section 1771.5 of the Labor Code. The law requires that District's labor compliance program shall include, but not be limited to, the following requirements:

***Some jobs will be Labor Compliant**

(a) All bid invitations and public works contracts shall contain appropriate language concerning the requirements of this chapter.

(b) A pre-job conference shall be conducted with the contractor and subcontractors to discuss federal and state labor law requirements applicable to the contract.

(c) Project contractors and subcontractors shall maintain and furnish, at a designated time, a certified copy of each weekly payroll containing a statement of compliance signed under penalty of perjury.

(d) The District shall review, and, if appropriate, audit payroll records to verify compliance with this chapter.

(e) The District shall withhold contract payments when payroll records are delinquent or inadequate.

(f) The District shall withhold contract payments equal to the amount of underpayment and applicable penalties when, after investigation, it is established that underpayment has occurred.

The District shall enforce a labor compliance program. A copy of the labor compliance program as currently adopted by the District is included with these bid documents. The labor compliance program which is approved by the Director of the Department of Industrial Relations (the "Labor Compliance Program") is incorporated by reference into the Contract and it will be enforced as required by state law and regulations and the Director of the Department of Industrial Relations.

In accordance with subdivision (b)(1) of Section 1771.5 of the Labor Code, the following notice is given: Contractor and any subcontractors are required to review and comply with the provisions of the California Labor Code, Part 7, Chapter 1, beginning with Section 1720, and the regulations of the Department of Industrial Relations implementing those provisions as more fully discussed in the Contract Documents and the labor compliance program as currently adopted by the District which is included with the bid documents. These statutory and regulatory provisions contain specific requirements, for example, concerning the determination and payment of prevailing wages, retention, inspection and auditing of payroll records, use of apprentices, payment of overtime compensation, securing of workers compensation insurance, and various criminal penalties or fines which may be imposed for violations of the requirements of the chapter. Submission of a bid constitutes Contractor's representation that it has thoroughly reviewed these requirements.

25. **Disabled Veterans Participation Goals.**

This contract [ ] is [X] is not subject to Disabled Veterans Participation Goals, in accordance with Education Code section 17076.11, this District has a participation goal for disabled veteran business enterprises ("DVBE") of at least 3 percent per year of the overall dollar amount of funds allocated to the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the District. Prior to, and as a condition precedent for final payment under any contract for such a project, the Contractor shall provide appropriate documentation to the District identifying the amount paid to disabled veteran business enterprises in conjunction with the contract, so that the District can assess its success at meeting this goal.

The Office of Small Business and DVBE Certification (OSDC), (916) 375-4940, www.pd.dgs.ca.gov/smbus, is an information resource to assist bidders in locating Disabled Veteran Business Enterprises.

(Please note: while the OSDC may be used as a resource, the DVBE Program administered by OSDC applies to state contracts, not local agency (school district) contracts.)

26. **Tobacco-Free Policy**

The Governing Board of the La Mesa-Spring Valley School District, in order to create a clean, healthy environment for students and employees, has prohibited the use of tobacco products on District Property or in District Vehicles. All District consultants, contractors and vendors shall inform their employees and agents that are performing services for the District, of the District's objectives of a smoke free environment (Board Policy 1331, Ed Code 48901).

INFORMATION FOR BIDDERS

DOCUMENT 00600
BID FORM
(To be executed by Bidder and submitted with bid)

TO: **La Mesa-Spring Valley School District**, acting by and through its Governing Board, herein called the "District":

1. Pursuant to and in compliance with your Notice to Contractors Calling for Bids and the other documents relating thereto, the undersigned bidder, having thoroughly examined and familiarize himself with the terms of the contract, the local conditions affecting the performance of the contract and the cost of the work at the place where the work is to be done, and with the drawings and specifications and other contract documents, hereby proposes and agrees to perform, within the time stipulated, the contract, including all of its component parts, and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all utility and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with all in strict conformity with the drawings and specifications and other contract documents, including addendum(s)_, , , and , on file at the office of the La Mesa-Spring Valley School District, Business Services, Purchasing Department, 4750 Date Avenue, La Mesa, CA 91942 of said District.

BID AWARD: Award will be determined on the lowest base bid. The grand total must match the sum of the extended prices from page(s) 12 on the bid form. The actual contract value is based on the actual necessary work issued between June 21, 2023 and August 01, 2023 following the issuance of the Notice to Proceed on approximately June 21, 2023

BID PRICE GUARANTEED: Prices quoted herein are to remain firm through September 9, 2023.

DOCUMENTS TO SUBMIT:

A	Bid Form
B	Certification of DIR Registration
C	Bid Bond
D	Designation of Subcontractors
E	Non-collusion Affidavit
F	Workers' Compensation Certificate
G	Addendum[s]
H	~~Answers to questions signed~~
I	References & Work History

DOCUMENT 00600
BID FORM

We hereby propose to furnish all labor, materials, equipment, tools, transportation, and services, and to discharge all duties and obligations necessary and required to perform and complete the Project for the following bid prices:

2. Bidders are to complete all Bid Form pages. Bid will be awarded by the lowest grand total.

BASE BID	**BID PRICE (IN WRITTEN FORM)** Said Sum includes all applicable taxes and costs	**BID PRICE (IN NUMBERS)** Said Sum includes all applicable taxes and costs
La Mesa Arts Academy LMAAC 4200 Parks Ave, La Mesa, CA 91941 **PROJECT TOTAL:** **(As described in General and / or Special Conditions)**	_____	$ _____

The Owner reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding. The award of the contract, if made by the Owner, will be by line item to the lowest responsive, responsible bidder(s) therefore, or to the Bidder with the lowest combined bid, whichever results in a lower total cost.

DOCUMENT 00600
BID FORM

3. It is understood that the District reserves the right to reject this bid and that this bid shall remain open and not be withdrawn for the period specified in the Notice to Contractors Calling for Bids.

4. Bidder's must have done similar work for municipalities for at least 5 years. Bidders must provide work history.

5. Bidder's must provide references for at least three (3) similar projects within the last year.

6. The required bid security is attached hereto.

7. Non-collusion affidavit is attached hereto.

8. The required list of proposed subcontractors is attached hereto.

9. It is understood and agreed that the bidder shall provide the addresses, telephone numbers, and license numbers of all listed subcontractors within one business day of bid opening or the bidder's bid may be rejected as nonresponsive.

10. It is understood and agreed that if written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within the time this bid is required to remain open, or at any time thereafter before this bid is withdrawn, the undersigned will execute and deliver to the District a contract in the form attached hereto in accordance with the bid as accepted. The undersigned will also furnish and deliver to the District the Performance Bond and Payment Bond for Public Works as specified, all within five (5) days after receipt of notification of award. The work under the contract shall be commenced by the undersigned bidder, if awarded the contract, on the date to be stated in the District's Notice to the Contractor to Proceed, and shall be completed by the Contractor in the time specified in the contract documents.

11. Notice of acceptance or requests for additional information, *RFI*, should be addressed to the undersigned at the address stated below:Robert Cochran, Director of Business Services at Robert.Cochran@LMSVschools.org or (619) 668-5700 x6220.
12. The names of all persons interested in the foregoing bid ~~proposal~~ as principals are as follows:

_____

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a copartnership, state true name of firm, also names of all individual copartners comprising the firm; if bidder or other interested person is an individual, state first and last names in full.)

DOCUMENT 00600
BID FORM

13. Bidder certifies that he is licensed in accordance with the law providing for the registration of Contractors, License No._____, Expiration Date_____, class of license_____.

~~14. The District reserves the right to hire a certified DSA approved inspector to inspect any or all projects undertaken by the successful bidder, at any point during the term of the contract, to check for contract compliance.~~

~~If non-compliance is discovered during such an inspection, the Contractor will be responsible for all inspection fees associated with that project and all cost related to remedy the discrepancy to bring it into compliance with the contract and satisfaction of the District.~~

I, , the of the bidder, hereby certify under penalty of perjury under the laws of the State of California, that all of the information submitted by the bidder in connection with this bid and all of the representations made herein are true and correct.

Executed on this day of_____ at _____County, California.

Proper Name of Bidder _____

By _____

_____
Signature of Bidder

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signatures of authorized officers or agents and the document shall bear the corporate seal; if bidder is a partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; and if bidder is an individual, his or her signature shall be placed above.

Business

Address:_____ Place of

Residence:_____ Email

Address:_____

Telephone:_____

END OF DOCUMENT

CERTIFICATION OF CONTRACTOR AND SUBCONTRACTOR DIVISION OF INDUSTRIAL RELATIONS REGISTRATION (To be executed by Bidder and submitted with bid)

Pursuant to Labor Code Section 1725.5, a contractor or subcontractor must be registered with the Department of Industrial relations in order to bid on, to be listed in a bid proposal or to engage in the performance of any defined public work contract.

I _____, _____ certify that
(Name) (Title)

_____ is currently registered as a contractor with the
(Contractor Name)

Department of Industrial Relations (DIR):

Contractor's DIR Registration Number: _____

Expiration date: _____

Contractor further acknowledges:

1. Contractor shall maintain DIR registered status for the duration of the project without a gap in registration.

2. Contractor shall note in its invitation to bid the DIR's registration requirement for all subcontractors and their subcontractors.

3. Contractor shall ensure that all subcontractors are registered at time of bid opening and maintain registered status for the duration of the project.

4. Contractor is to verify the DIR Registration Number for all subcontractors on the project within 24 hours of the bid opening.

5. Contractor may need to substitute any subcontractor with a DIR registered contractor if the listed subcontractor is unable to perform the work.

Failure to comply with any of the above may result in a determination of

non-responsiveness. I declare under penalty of perjury under California law that the

foregoing is true and correct.

_____
Signature

_____
Date

CERTIFICATION OF DIR REGISTRATION

DOCUMENT 00410

BID BOND

(To be executed by Bidder and submitted with bid)

KNOW ALL MEN BY THESE PRESENTS: THAT we, _____, as Principal, and _____, as Surety, are held and firmly bound unto the School District, hereinafter called the District, in the penal sum of _____ PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal submitted to the said District for the work described below for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted the accompanying bid

dated _____, 20____ for **BID NUMBER FB #22/23-008**

LMAAC Kitchen Remodel

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after said opening; and, if the Principal be awarded the contract, and shall within the period specified therefore, or, if no period be specified, within five (5) days after the prescribed forms are presented to him for signature, enter into a written contract with the District, in accordance with the bid as accepted and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract and for the payment for labor and materials used for the performance of the contract, or in the event of the withdrawal of said bid within the period specified or the failure to enter into such contract and give such bonds within the time specified, if the Principal shall pay the District the difference between the amount specified in said bid and the amount for which the District may procure the required work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the District in again calling for bids, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

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

In the event that a suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all litigation expenses incurred by the District in such a suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this day of _____ , the name and corporate seal of each corporate party being hereto affixed and these presents duly assigned by its undersigned representative, pursuant to authority of its governing body.

PRINCIPAL _____

By: _____

Title: _____

SURETY: _____

By: _____

Attorney-in Fact

(Attach Attorney-in-Fact Certificate)

BID BOND

DOCUMENT 00430
DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (chapter 4 (commencing at section 4100), part 1, division 2 of the Public Contract Code of the State of California) and any amendments thereof, each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement to be performed under this contract or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the prime contractor's total bid and (b) the portion of the work which will be done by each subcontractor under this contract. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in this bid. (c) the California contractor's license number; **and effective for all contracts awarded on or after April 1, 2015, (d) DIR Registration Number.**

If a prime contractor fails to specify a subcontractor or if a prime contractor specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the prime contractor's total bid, he shall be deemed to have agreed that he is fully qualified to perform that portion himself, and that he shall perform that portion himself.

No prime contractor whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontract to be voluntarily assigned or transferred or allow it to be performed by any one other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which his original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the authority awarding this contract setting forth the facts constituting the emergency or necessity.

DESIGNATION OF SUBCONTRACTORS

(To be executed by Bidder and submitted with bid)

Subcontractor Business License DIR Portion

Name Address Number Registration# of Work

Proper Name of Bidder: _____

By: _____

DESIGNATION OF SUBCONTRACTORS

NON-COLLUSION DECLARATION

(To be executed by Bidder and submitted with bid)

The undersigned declares:

I am the _____ (Title) of _____

(Name of Company) 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 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 purposes.

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 this:

day of _____

City of_____, State of _____

Signed:_____

Title:_____

CONTRACTOR'S CERTIFICATE REGARDING
WORKERS' COMPENSATION
(To be executed by Bidder and submitted with bid)

Labor Code section 3700 in relevant part provides:

> Every employer except the State shall secure the payment of compensation in one or more of the following ways:
>
> (a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this State.
>
> (b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees.

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.

_____(Name)

_____(Title)

_____(Company)

(In accordance with article 5 (commencing at section 1860), chapter 1, part 7, division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this contract.

DOCUMENT 00500
AGREEMENT

THIS AGREEMENT, made this ____ day of _____in the County of San Diego, State of California, by and between the **La Mesa-Spring Valley School District**, hereinafter called the District, and__ _____hereinafter called the Contractor, **WITNESSETH** that the District and the Contractor for the considerations stated herein agree as follows:

ARTICLE 1 - SCOPE OF WORK.
The Contractor shall perform within the time stipulated the contract as herein defined, and shall provide all labor, materials, tools, utility services, and transportation to complete in a workmanlike manner all of the work required in connection with the following titled project:

BID NUMBER FB #22/23-008

LMAAC Kitchen Remodel

in strict compliance with the contract documents as specified in Article 5 below.

ARTICLE 2 - TIME FOR COMPLETION.
(a) The work shall be commenced on the date stated in the District's notice to proceed, as provided in Section A of the Special Conditions. As specified in District's notice to proceed, the work shall be completed within **_100_** calendar days from and after the date stated in such notice, which shall include **_5_** working days for normal bad weather, taking into consideration the seasonal weather for the time when construction will be undertaken.
(b) In entering into this Agreement, Contractor acknowledges and agrees that the construction duration stipulated herein is adequate and reasonable for the size and scope of the project.

ARTICLE 3 – PAY QUANTITIES AND UNIT PRICES.
The District shall pay to the Contractor for all work done on the basis of final computations for all work acceptably completed according to this contract, at the unit price shown in the proposal for the quantity actually installed.

ARTICLE 4 – INSPECTOR.
The District reserves the right to hire a ~~certified DSA approved~~ inspector to inspect any or all projects undertaken by the Contractor, at any point during the term of the contract, to check for contract compliance.

If non-compliance is discovered during such an inspection, the Contractor will be responsible for all inspection fees associated with that project and all cost related to remedy the discrepancy to bring it into compliance with the contract and satisfaction of the District.

ARTICLE 5 - COMPONENT PARTS OF THE CONTRACT.
The contract entered into by this Agreement consists of the following contract documents (referred to herein as the contract or the contract documents), all of which are component parts of the contract as if herein set out in full or attached hereto:

Notice to Contractors Calling for Bids
Information for Bidders
Bid, as accepted
Certification of Contractor and Subcontractor Division of Industrial Relations
Registration Designation of Subcontractors
Non-collusion Affidavit
Agreement
Performance Bond
Payment Bond for Public Works
Contractor's Certificate Regarding Workers' Compensation
General Conditions and Special Conditions
Questions and Answers
Specification Addendum(s)_, , , as issued
Drawings
~~Labor Compliance Program (if applicable)~~

All of the above-named contract documents are intended to be complementary. Work required by one of the above-named contract documents and not by others shall be done as if required by all. This agreement shall supersede any prior agreement of the parties.

ARTICLE 6 – PREVAILING WAGES.
Contractor shall be required to pay the prevailing rate of wages in accordance with the labor code which such rates may be obtained online at http//www.dir.ca.gov/dlsr and which must be posted at the job site.

IN WITNESS WHEREOF, this Agreement has been duly executed by the above-named parties, on the day and year first above written.

CONTRACTOR: DISTRICT:

La Mesa-Spring Valley School District (Company Name)

By _____ By _____
Jennifer Nerat
Title _____ Assistant Superintendent, Business Services

Contractor's License No. _____

Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any questions concerning a contractor may be referred to the registrar of the board whose address is:

Contractors' State License Board
9821 Business Park Drive Sacramento CA 95827
(916)255-3900; http://www.cslb.ca.gov
(Business & Professions Code, section 7030)

DOCUMENT 00600
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the **La Mesa-Spring Valley School District** (hereinafter designated as "Public Entity"), by action taken

or a resolution passed , 20_, has awarded to , hereinafter designated as the "Principal," a contract for the work described as follows:

BID NUMBER FB #22/23-008

LMAAC Kitchen Remodel

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

NOW THEREFORE, we, the Principal and, as _____Surety, are held and firmly bound
(Surety Name)
unto the Public Entity in the penal sum of Dollars ($) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounded 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 said contract and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Public Entity, its officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise, it shall be and remain in full force and virtue.

And the said 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, or the specifications accompanying the same, shall in anywise affect its obligation on this bond, and does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract, or to the work, or to the specifications.

In the event a suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all litigation expenses incurred by the District in such a suit, including attorneys' fees, court costs, expert witness fees and investigation expenses.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the ____day of _____, 20___ .

PRINCIPAL_____

By:_____

[Attach required acknowledgments]

SURETY_____

By: _____
Attorney-in-Fact

DOCUMENT 00610 - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That
WHEREAS, the **La Mesa-Spring Valley School District** (hereinafter designated as "Public Entity"), by action taken

or a resolution passed , 20_, has awarded to , hereinafter designated as the "Principal," a contract for the work described as follows:

BID NUMBER FB #22/23-008

LMAAC Kitchen Remodel

WHEREAS, said Principal is required by Chapter 5 (commencing at Section 3225) and Chapter 7 (commencing at Section 3247), Title 15, Part 4, Division 3 of the California Civil Code to furnish a bond in connection with said contract;

NOW THEREFORE, we, the Principal and , as Surety, are held and firmly bound unto the Public Entity in the penal sum of Dollars ($_____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay (1) any of the persons named in Section 3181 of the California Civil Code, (2) amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or (3) for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the contractor and his subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor the surety or sureties will pay for the same, in an amount not exceeding the sum hereinabove specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by the Public Entity in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

This bond shall insure to the benefit of any of the persons named in Section 3181 of the California Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement hereinabove described, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the owner or Public Entity and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 3110 or 3112 of the California Civil Code, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____day of , 20___.

PRINCIPAL_____

By:_____

[Attach required acknowledgments]

SURETY_____

By: _____

Attorney-in-Fact

LA MESA ARTS ACADEMY

KITCHEN DISHWASHER REPLACEMENT

LA MESA SPRING VALLEY SCHOOL DISTRICT

SPECIFICATIONS

MAY 18, 2023

studiowc
ARCHITECTURE + ENGINEERING

515 Encinitas Boulevard, Suite 201, Encinitas, CA 92024
Ph. 760.753.6800 Fax 760.552.7541

00 00 00

PROCUREMENT AND CONTRACTING REQUIREMENTS

LA MESA SPRING VALLEY UNIFIED SCHOOL DISTRICT

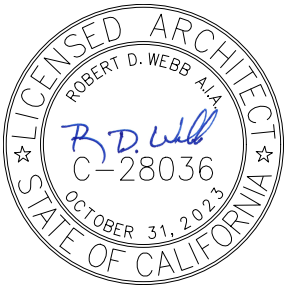
LA MESA ARTS ACADEMY
KITCHEN DISHWASHER REPLACEMENT
LA MESA SPRING VALLEY SCHOOL DISTRICT

STATE OF CALIFORNIA Department of General Services DIVISION OF THE STATE ARCHITECT San Diego Regional Office 10920 Via Frontera, Suite 300, San Diego, CA 92127 Phone: (858) 674-5400	PROJECT TRACKING NO.: DSA APPLICATION NO.: STAMP DATE:

STUDIOWC

515 Encinitas Boulevard, Suite 201, Encinitas, CA 92024

(760) 753-6800

ARCHITECT: STUDIOWC _____ Robert D. Webb, Architect, C-28036	
MECHANICAL/PLUMBING ENGINEER: PMPE Consultants _____ Max Pajouhesh, Mechanical Engineer, M-27488	
ELECTRICAL ENGINEER: Johnson Consulting Engineers, Inc. _____ Monica Goese Hansen, Electrical Engineer, E-14781	

END OF PROJECT TITLE PAGE

SECTION 00 01 10
TABLE OF CONTENTS

END OF SECTION

01 00 00

GENERAL REQUIREMENTS

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

A. Project: Kitchen Dishwasher Replacement at La Mesa Arts Academy for La Mesa Spring Valley School District.

B. Description of Work: Replacement of existing dish washer, exhaust fan, floor sinks, and plumbing. Removal of existing water heater, acoustical wall and ceiling tiles, and miscellaneous sitework, as indicated in the Contract Documents prepared by StudioWC.

1.02 PERFORMANCE REQUIREMENTS

A. All work shall conform to 2022, Title 24, California Building Code (CBC).

B. Changes to the approved Drawings and Specifications shall be made by addenda or a construction change document (CCD) approved by the Division of the State Architect, Office of Regulation Services, as required by Section 4-338, Part 1, Title 24, California Building Code.

1.03 WORK UNDER OTHER CONTRACTS

A. No work is planned or scheduled to be performed by the Owner's own forces.

1.04 WORK SEQUENCE

A. Work is to be conducted in a single phase based on a single lump-sum contract. All work shall be completed within _____ ( ) calendar days after the date of commencement of work stipulated in the Notice to Proceed. The contract closeout procedure as specified in Section 01 77 00 - Closeout Procedures shall be completed within this period. Normal inclement weather for the various seasons of the year shall not be grounds for extensions of contract time, and the Contractor shall take this into account when formulating his Construction Schedule. By submitting a Bid and entering into this Contract, Contractor certifies that he has adequate resources and is fully capable of completing the Work within the allotted time.

1.05 CONTRACTOR USE OF PREMISES

A. During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site. The Contractor's use of the premises is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of the project.

B. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.

1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

C. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

D. Use of the Existing Buildings: Maintain the existing buildings in a weather-tight condition throughout the construction period. Repair damage caused by construction operations.

Take all precautions necessary to protect the building and its occupants during the construction period.

1.06 OCCUPANCY

A. At each phase of completion, the Owner will occupy the Project in the manner outlined in Section 01 77 00 - Closeout Procedures, and as set forth in the General Conditions. Refer to General Conditions of the contract, Article 1.02. B. (Occupancy) and Article 1.02.C.(Completion) for occupancy and completion conditions.

Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy.

2. Obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.

3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01 21 00
ALLOWANCES

PART 1 - GENERAL

1.01 SUMMARY

A. Include in the Contract Sum all allowances stated in the Contract Documents.

B. Related Documents:

1. Drawings, Specifications, and General Provisions of the Contract.

1.02 ALLOWANCES FOR PRODUCTS

A. The amount of each allowance includes:

1. The cost of the product to the Contractor, less any applicable trade discounts.
2. Delivery to the site.
3. Labor for installation.
4. Applicable taxes.

B. In addition to the amount of each allowance, include in the Contract Sum the Contractor's costs for:

1. Handling at the site, including unloading, uncrating, and storage.
2. Protection from the weather and from damage.
3. Labor for installation and finishing.
4. Other expenses required to complete the installation.
5. Contractor's and Subcontractor's overhead and profit.

PART 2 - PRODUCTS

2.01 LUMP SUM ALLOWANCES

PART 3 - EXECUTION

3.01 3.01 SELECTION OF PRODUCTS

A. The Architect will:

1. Consult with the Contractor in consideration of products and suppliers or installers.

2. Make selection in consultation with the Owner. Obtain Owner's written decision, designating:

a. Product, design and finish.
b. Accessories and attachments.
c. Supplier and installer as applicable.
d. Cost to Contractor, delivered to the site or installed, as applicable.
e. Manufacturer's warranties.

B. The Contractor shall:

1. Assist Architect and Owner in determining qualified suppliers or installers.
2. Obtain proposals from suppliers and installers when requested by Architect.
3. Make appropriate recommendations for consideration of the Architect.

4. Notify Architect promptly of:

a. Any reasonable objections Contractor may have against any supplier or party under consideration for installation.

b. Any effect on the Construction Schedule anticipated by selections under consideration.

3.02 CONTRACTOR RESPONSIBILITY

A. On notification of selection, execute purchase agreement with designated supplier.

B. Arrange for and process Shop Drawings, product data and samples, as required.

C. Make all arrangements for delivery.

D. Upon delivery, promptly inspect products for damage or defects.

E. Submit claims for transportation damage.

F. Install and finish products in compliance with requirements of referenced specification sections.

3.03 ADJUSTMENT OF COSTS

A. Should the net cost be more or less than the specified amount of the allowance, the Contract Sum will be adjusted accordingly by Change Order. The amount of the Change Order will recognize any changes in handling costs at the site, labor, installation costs, overhead, profit, and other expenses caused by the selection under the allowance.

B. Submit documentation for actual additional costs at the site, or other expenses caused by the selection under the allowance, within 60 days after completion of execution of the work. Failure to submit claims within the designated time will constitute a waiver of claims for additional costs.

C. At contract closeout, reflect all approved changes in contract amounts in the final statement of accounting.

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: General requirements for the proposal of substitutions.

1.02 MATERIAL

A. Equipment, materials, and articles incorporated into the work shall be new and suitable for the purposes intended.

B. Reference to equipment, material, article, or patented process by trade name or catalog number shall not be construed as limiting competition.

1. In cases where the Specifications designate a material, product, thing, or service by specific proprietary brand or trade name, and there is only one brand or trade name listed, the item involved is:

a. Used as a standard of quality which must be satisfied without compromise, or

b. The only brand or trade name known to the Owner and Architect.

2. Wherever in the Contract Documents a material, article, or process is indicated or specified by trade, patent, proprietary name, or name of manufacturer, such indication shall be deemed to be followed by the words, **"or equivalent, as accepted in writing by the Architect".**

a. Contractor shall submit a substitution request for Architect's written acceptance.

3. If the phrase "NO SUBSTITUTIONS" is used, the product is required to be used since it is a unique product application.

C. The naming of more than one manufacturer in a Section does not imply that all products of named manufacturers are acceptable for use on the Project. Where more than one proprietary name is specified, provide materials or equipment of any one of the manufacturers specified, only if full compliance with other portions of the Specifications can be provided.

D. Construction shall be in compliance with the cited standards for the materials specified.

1.03 SUBSTITUTIONS

A. Should the Contractor wish to substitute an item purported to be equal to the one specified, then the Contractor shall, no later than (10) ten days after Award of Contract, furnish to the Architect the name of the manufacturer, model number, color options and other pertinent data and information respecting the "or equivalent" item which has been proposed in the bid and which the Contractor contemplates incorporating in the work. If the "or equivalent" item is not found by the Architect to be, in fact, equivalent or better, then the item specified in the Contract Documents shall be furnished.

When colors have been indicated prior to Bid, Contractor shall be required to provide a custom color to match. See Section 01 33 00, Submittal Procedures.

B. When required by the Contract Documents, or when directed by the Owner, furnish full information concerning the material or article proposed for incorporation into the work.

Testing of a proposed substitute material to assure compliance with the Specifications may be required by the Owner at the Contractor's expense. When so directed, submit samples for acceptance. Equipment, material, and articles installed or used without required acceptance shall be at the risk of subsequent rejection, and replacement at Contractor's cost.

C. Substitutions shall comply with, or exceed, requirements of dimension, function, structure, durability, and appearance without exception. Use of accepted substitutions shall in no way relieve the Contractor from responsibility for compliance with the Contract Documents after installation. It shall be incumbent upon the Contractor using accepted substitutions to assume extra costs caused by the use of such substitutions where they affect other work.

D. Do not substitute materials, equipment, or methods unless such substitution has been reviewed and approved by the Architect. **Substitutions shall be submitted to the Division of the State Architect for approval prior to acceptance by Architect. Contractor is responsible for all costs associated with this substitution submittal. If said substitution is not accepted by the Division of the State Architect, the contractor shall provide the originally specified item at no cost to the owner and no impact to the project schedule.**

E. "Or Equivalent":

1. Where the phrase "or equivalent", "or approved equivalent", or "or equivalent as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be accepted as equal unless the item has been specifically accepted, in writing, for the Work by the Architect **and by the Division of the State Architect for items which "affect health, safety or welfare" prior to installation or fabrication. Contractor is responsible for all costs associated with this substitution submittal. If said substitution is not accepted by the Division of the State Architect, the contractor shall provide the originally specified item at no cost to the owner and no impact to the project schedule.**

F. Failure to place orders for specified equipment or material sufficiently in advance of the scheduled installation date will not be considered a valid reason upon which the Contractor may base his request for substitutions or for deviations from the Drawings and Specifications.

G. In the event the Contractor requests changes or revisions requiring drawings or services of the Architect or the Architect’s consultants, to facilitate installation or erection of any portion of the work, the Contractor shall accept the responsibility to hire and pay for the Architect's or Consultant's services. A standard hourly rate of $150.00, shall be paid by the Contractor whether the change is accepted or rejected. In the event the change is approved, this fee shall be deducted, and paid, from the Contract Sum.

H. Redesigning by the Contractor: Redesigning shall be by an Engineer licensed, in the State of California, to perform such work and approved the architect of record. Review of any optional redesigning by contractor by the architect shall be paid by the contractor at a standard hourly rate of $150.00, whether the change is accepted or rejected. In the event approval is required from authorities having jurisdiction, such approval shall be obtained by the Contractor at the Contractor’s expense before submitting the revised design or substitution to the Architect. **Contractor is responsible for all costs associated with this substitution submittal. If said substitution is not accepted by the Division of the State Architect, the contractor shall provide the originally specified item at no cost to the owner and no impact to the project schedule.**

I. Revision after Approval: When a submittal has been reviewed by the Architect, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an explanation acceptable to the Architect as to the reason substitution

is considered necessary. Changes in Plans and Specifications, which effect safety, health or welfare, shall be made by Addenda or Construction Change Document approved by the Division of the State Architect. **Contractor is responsible for all costs associated with this substitution submittal. If said substitution is not accepted by the Division of the State Architect, the contractor shall provide the originally specified item at no cost to the owner and no impact to the project schedule.**

1.04 SUBSTITUTION REQUEST FORM:

A. Submittal of the requested information shall be accompanied by the attached Substitution Request Form. Submit a digital (PDF) of each request to the Architect. Architect will distribute as appropriate. Substitutions will be rejected if they are not accompanied by a completed Substitution Request Form. Incomplete forms will constitute automatic rejection. **Contractor is responsible for all costs associated with this substitution submittal. If said substitution is not accepted by the Division of the State Architect, the contractor shall provide the originally specified item at no cost to the owner and no impact to the project schedule.**

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

ATTACHMENT: Substitution Request Form

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SUBSTITUTION REQUEST FORM

Re: _____
Project Name

_____
Project Manual Section Number

_____
Item

To: _____
Architect

From: _____
Contractor

Reviewed for timeliness and completeness by General Contractor:

We hereby submit for your consideration the following product comparisons of the specified item and the proposed substitution:

A. Comparison — Specified Item — Substitution

1. Product Name/Model _____ _____

2. Manufacturer _____ _____

Address _____

Address _____

Phone Number _____

3. Product Cost _____

Installation/Labor Cost _____

4. Delivery Time _____

Installation Time _____

5. Product Characteristics _____

6. Dimensions _____

Effects _____

7. Guarantee/Warranty _____

8. **ICC No.** _____

9. UL Rating _____

B. Substantiating Data:

Attach manufacturer's literature for both specified item and substitution.

C. Samples: Provide samples for both specified item and substitution, if applicable.

D. Similar Projects for Reference:

1. _____ _____
Name Date

_____
Address

_____
Address

_____
Contact

_____
Telephone

2. _____ _____
Name Date

_____
Address

_____
Address

_____
Contact

_____
Telephone

E. Maintenance Service/Parts/Supplier:

_____
Name

_____
Address

_____
Address

_____
Telephone

F. What effect does this substitution have on applicable code requirements?

_____

_____

_____

_____

G. Change Data:

Attach complete information for changes to be made to Drawings and Project Manual.

* * * * * * * * * * * * * * *

* Certification of equal performance and assumption of liability for equal performance.

* The Contractor shall agree to pay for costs involved in changing the building design; including engineering, drafting and detail cost caused by the proposed substitution.

Submitted by:

_____ _____

Signature Name

Title _____

_____ _____

Firm Name Date

_____ _____

Address Address

_____ _____

City State Zip Telephone

Remarks:

_____

_____

_____

Signature must be by persons having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

Product substitution of _____

for _____

Specifications Section _____
(number) (name)

For Use by Owner's Representative:

□ Accepted □ Not Accepted

Owner's Consultant:

By: _____

Date: _____

□ Accepted □ Not Accepted

School District:

By: _____

Date: _____

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements governing the Contractor's Applications for Payment.

B. Related Work:

1. The Construction Progress Schedule is included in Section 01 32 16 and shall be coordinated with the work of this Section.

2. PROJECT RECORD DOCUMENTS: All requirements for record documents, Specification Section 01 78 39, shall be completed to the Owner's satisfaction prior to Owner's processing of each month's Application for Payment.

1.02 SCHEDULE OF VALUES

A. Coordinate preparation of the Schedule of Values with preparation of the Network Analysis Schedule.

B. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than (7) seven days before the date scheduled for submittal of the initial Application for Payment. Include with initial submission a projected monthly payment request schedule for total cost of project, for Owner's cash flow planning.

C. Acceptance of the Schedule of Values by the Architect and the District is required prior to approval and payment of the first application for payment.

D. Format and Content: The Project Manual Table of Contents may be used as a general guide to format the Schedule of Values; specific item numbers may be sequentially numerical.

1. The Schedule of Values shall be a detailed breakdown of the price to provide and install each item of work and material on the project.

2. Each line item on the Schedule of Values shall be presented to allow the Architect to easily find that item of work within the construction during his review of the construction operations and evaluate whether that line item is 100% complete or not.

3. Each line item of the Schedule of Values shall be given a value by the Contractor that, in the opinion of the Contractor, best represents the value of that work, and if required to present evidence of his opinion, the Contractor will be able to substantiate the value by the use of supplier, subcontractor written quotations, labor wages/rates, hourly estimates and/or by industry recognized cost estimating references.

4. Each line item of the Schedule of Values shall be in such detail and coordinated with other line items of work and with the contractor's Construction Schedule, that when making application for payment each month, each line item depicts a portion of work that can be completed within one month's pay period, reviewed by the Inspector and the Architect; if that line item is 100% complete, recommended to the Owner for payment. If, in the opinion of the Architect, the line item is not 100% complete, the line item will not be recommended for payment.

5. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed. Each sheet of the Schedule of Values shall be titled and numbered sequentially.

   a. Line Item Number

   b. Description of Item.

   c. Quantity.

   d. Unit of Measure.

   e. Unit Price.

   f. Value of Line Item.

   g. Line Item Value Request this month.

   h. Line Item Value previously completed.

   i. At the bottom of each sheet, the Total Amount of Columns f, g, and shall be tabulated and carried forward on each page and the TOTAL AMOUNT presented at the end.

E. Round amounts off to the nearest whole Dollar; the total shall equal the Contract Sum.

F. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.03 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

   1. The initial Application for Payment, the Application for Payment at the time of Substantial Completion, and the final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is the 15th day of each month. The period of construction Work covered by each Application for Payment is the period ending 15 days prior to the date for each progress payment and starting the day following the end of the preceding period.

C. Payment Application Forms: Use AIA Document G702 and the form of Schedule of Values accepted by the Architect and approved by the District.

D. Application Preparation: Complete each entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.

   1. Entries shall match data on the Network Analysis Schedule. Use updated schedules if revisions have been made.

   2. Include amounts of Owner-approved Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

E. Transmittal: Submit three (3) executed copies of each Application for Payment to the Architect by means of ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required.

1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.

F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment.

1. Submit each Application for Payment with the Contractor's waiver of mechanics lien for the period covered by the Application.

2. Submit final Application for Payment with or precede by final waivers from entity involved with performance of Work covered by the application who could lawfully be entitled to a lien.

G. Initial Application for Payment: Administrative actions and submittals that must precede submittal of the first Application for Payment include the following:

1. List of subcontractors.

2. Schedule of Values.

3. Contractor's Construction Schedule.

4. Schedule of unit prices, if applicable.

5. Submittal Schedule.

6. Copies of permits as may be required to start the Work (encroachment permits, etc., may be obtained as necessary for sequence of construction).

7. Copies of authorizations and licenses from governing authorities for performance of the Work.

8. Initial progress report.

9. Report of pre-construction meeting

10. Certificates of insurance and insurance policies.

11. Performance and payment bonds.

Note: Each preceding item shall be submitted to the Architect, accepted by the Architect and approved by the Owner prior to the certification and approval of the first payment to the Contractor.

H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work. Administrative actions and submittals that shall proceed or coincide with this application include:

1. Occupancy permits and similar approvals.

2. Warranties (guarantees) and maintenance agreements.

3. Test/adjust/balance records.

4. Maintenance instructions.

5. Meter readings.

6. Start-up performance reports.

7. Change-over information related to Owner's occupancy, use, operation and maintenance.

8. Final cleaning.

9. Application for reduction of retainage, and consent of surety.

10. Advice on shifting insurance coverages.

11. Final progress photographs.

12. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion. Each work item value shall be listed and the total amount deducted from amounts owed over and above the retention.

I. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements.

2. Completion of items specified for completion after Substantial Completion.

3. Written assurance that unsettled claims will be settled.

4. Written assurance that Work not complete and accepted will be completed without undue delay.

5. Transmittal of required Project construction records to Owner.

6. Certified property survey.

7. Proof that taxes fees and similar obligations have been paid.

8. Removal of temporary facilities and services.

9. Removal of surplus materials, rubbish and similar elements.

10. Change of door locks to Owner's access.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

Attachments: Application and Certification for Payment – Form G702
Continuation Sheet – Form G702

APPLICATION AND CERTIFICATE FOR PAYMENT (G702

TO: <SCHOOL DISTRICT> SCHOOL DISTRICT

PHONE:

FROM:

PROJECT:

VIA ARCHITECT:

PHONE:

APPLICATION NO:
PERIOD TO:
PROJECT NO:
CONTRACT DATE:
CONTRACT FOR:

DISTRIBUTION TO:
- ☐ OWNER
- ☐ ARCHITECT
- ☐ CONTRATOR
- ☐ FIELD
- ☐ OTHER

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made fro payment, as shown below, in connection with the Contract Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	**$**	
2. Net Change by Change Orders & Extras	**$**	
3. CONTRACT SUM TO DATE (Line 1 + Line 2)	**$**	
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	**$**	
5. RETAINAGE:		
a. ____ % of Completed Work …$_____		
b. ____ % of Stored Material …..$_____		
Total Retainage (Line 5a + 5b)		
Total in Column I of G703	**$**	
6. TOTAL EARNED LESS RETAINAGE (Line 4 less Line 5 Total)	**$**	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	**$**	
8. CURRENT PAYMENT DUE	**$**	
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	**$**	

CHANGE ORDER SUMMARY		
Total changes approved in Previous months by Owner	**$**	
Total approved this month	**$**	
NET CHANGES by Change Order	**$**	

State of: _____ County of _____ .

Subscribed and sworn to before me this _____ day of _____ , 20___.

Notary Public: _____ My Commission Expires:

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ **Date:** _____

INSPECTOR:

By: _____ **Date:** _____

OWNER:

By: _____ **Date:** _____

AMOUNT CERTIFIED ……..……..$ _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ARCHITECT:

By: _____ **Date:** _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

SECTION 01 31 13

PROJECT COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and supervisory requirements required to ensure orderly progress and timely completion of the Work.

B. Related Work Described Elsewhere:

1. Additional requirements for coordination are included on Contract Drawings and other Sections of the Specifications. It is intended that all work provided under this Contract shall be complete except where otherwise specified or shown. Any drawing, document, or section, by itself, is not a complete description of the work. Cross references to related work, where given, are provided as a convenience and shall not limit the applicability of other requirements specified or shown unless specifically stated.

1.02 QUALITY ASSURANCE

A. Familiarity With Contract Documents:

1. Contractor and all Subcontractors shall conduct a study necessary to become completely familiar with all requirements. Applicable requirements indicated or described in the Contract Documents, and the publications referred to, are a part of the Work required as though repeated in each such Section.

2. In the event discrepancies or conflicts are encountered, notify the Architect immediately. Where there is discrepancy between different parts of the contract documents, including referenced codes and standards, the documents requiring the higher quality, the greater quantity, or the more difficult work shall govern, unless determined otherwise by the Architect.

3. Promptly distribute required information to entities concerned and ensure the needed actions are taken.

B. Reporting: Unless otherwise noted by the Contractor in his transmittals, all of the Contractor's data transmittals to the Architect for the Architect's review will be construed as stipulating that the Contractor has thoroughly and completely reviewed and coordinated the data prior to transmittal.

C. Interfacing: It shall be solely the responsibility of the Contractor to make sure that each Subcontractor completes in a timely manner the assigned work and that all interfaces are prepared, connected, and function as required.

1.03 REQUEST FOR INFORMATION

A. The General Contractor shall plan, schedule, coordinate and sequence Work so Requests for Information (RFI), if necessary, may be submitted to the Architect in a timely manner so as not to delay progress of Work. Submission of and responses to RFI(s) with copies to Owner, shall be transmitted via email.

B. Telephone conversations requesting information shall be confirmed in writing for prompt reply of all RFIs. Contractor shall coordinate the timing of email and telephone conversations to be made with the Architect's office between the hours of 8:00 a.m. and noon, Monday through Friday.

C. RFIs will be unanswered until Contractor submits a "Construction Schedule". "Construction Schedule" shall be based on Specification Section arrangement and establish starting and ending dates for Work in each section. "Construction Schedule" shall be updated monthly and delivered to Architect and Owner at "Request for Payment".

D. If "Construction Schedule" is not received by Architect and Owner by that date, Architect's response to pending RFI(s) will be delayed by the same number of days as the days the "Construction Schedule" is late.

E. Architect shall have the same time period to respond to RFI(s) as "shop drawing review period". When the response to a Request for Information is already contained or included within contract documents, or is based on referenced standards, or is based on established and common construction practices, Contractor shall reimburse the Architect at the following hourly rates:

Principal	$200.00/hour
Associate Architect/Project Manager	$150.00/hour
Project Architect	$ 95.00/hour
Revit/CADD	$ 85.00/hour
Job Captain	$ 75.00/hour
Draftsperson	$ 65.00/hour
Support Staff	$ 55.00/hour

If RFI requires Architect's Consultant(s) acknowledgment, Contractor shall reimburse consultant(s), at the same hourly rates for consultant's staff; Contractor shall also pay to the Architect, a percentage for overhead and profit to the consultant's fee, equal to the markup the General Contractor adds to "Change Orders" from his "Subcontractors".

F. Contractor shall be billed at "Request for Payment" meeting, and payment is due on the 10th day of the following month. If payment is not received by Architect by that date, Architect's response to pending RFI's will be delayed by the same number of days as the days the payment check for RFI services is late.

G. No damages for delay due to RFI response beyond allotted time will be allowed, unless Contractor can show that RFI was not foreseeable with proper planning, scheduling, coordination, and sequencing and the Architect's late response delayed timely purchase or delivery of equipment or material, or limited construction personnel from proceeding with their task(s), within previously listed "Construction Schedule" activity period(s).

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION

3.01 PLANNING THE WORK

A. By thorough advance planning of activities, coordinate the following in addition to other coordination activities required:

1. Materials, services, and equipment purchasing.

2. Shipping.

3. Receipt and storage at the site.

4. Installation, including interface with related items.

5. Inspection and testing, to the extent required under the Contract.

6. Assistance in initial start-up and operational tests.

7. Completion of the Work, including removal and disposal of Contractor's surplus material and equipment, and final cleaning of structures and sites.

3.02 COORDINATION

A. Coordinate construction activities included under various Sections of these Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work.

3.03 GENERAL INSTALLATION PROVISIONS

A. Coordination methods used by the Contractor are at the Contractor's option, except that the Architect may disapprove Work completed by the Contractor or data submitted by the Contractor when, in the Architect's judgment, coordination has been inadequate to ensure the specified quality.

B. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

END OF SECTION

Attachment: Request for Information – Form RFI

REQUEST FOR INFORMATION (RFI)

SCHOOL NAME - PROJECT NAME

NOTE: AN RFI IS A REQUEST FOR INFORMATION ONLY. IF A REPLY TO AN RFI REQUIRES ADDITIONAL SERVICES BY A DESIGN CONSULTANT, OR WILL CHANGE SCOPE OF WORK OR CONTRACT TIME, SUBMIT PROPOSAL REQUEST IN ACCORDANCE WITH SECTION 01 25 00.

RFI #: _____

To: _____ Date: _____

Architect: _____ Project No.: _____

Address: _____ Drawing Ref.: _____

Phone: _____ Fax: _____ Spec. Sect. Ref.: _____

Email: _____

☐ POSSIBLE COST IMPACT ☐ TIME IMPACT ☐ PRIORITY ATTENTION REQUIRED

Subject:

INFORMATION REQUESTED: (Attach additional sheets as required)

PLEASE RESPOND BY: _____ TRANSMITTED BY: _____

RESPONSE: (Attach additional sheets as required)

RESPONDED BY:

Name: _____ Company: _____ Date: _____

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Prior to commencement of the Work, a Preconstruction Conference will be held to discuss procedures to be followed during the progress of the Work.

B. Location: A convenient site for all parties designed by the District.

C. Attending the Preconstruction Conference shall be:

1. District Representative
2. District's Project Representative
3. Architect
4. District's and Architect's Consultants
5. Contractor
6. Contractor's Superintendent
7. Major listed Subcontractors
8. Others as appropriate

1.02 PROPOSED PROGRESS MEETINGS

A. Schedule and hold weekly meetings or as required by the District Representative.

1. Agenda to be prepared and submitted 48 hours prior to meeting.

B. Location: A convenient site for all parties designed by the District.

C. Attending Progress Meetings shall be:

1. Contractor and/or fully delegated Representative
2. Contractor's Superintendent
3. Subcontractors, as appropriate to the Agenda.
4. Others, as appropriate to the Agenda.
5. Inspector of Construction
6. District Representative
7. Architect

D. The Architect will record and distribute Meeting Minutes to the attendees. Attendees taking exception to anything in the meeting notes shall state same in writing, directed to the Architect within (5) five working days following receipt of meeting notes.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Manually prepared construction schedule based on Gantt (bar) Charts. Prepare and maintain schedules and issue reports to assure adequate planning and execution of the Work. Complete Work within the number of calendar days allowed in the Contract. Schedule shall be in sufficient detail to assist the Architect in appraising the reasonableness of the proposed schedule and to evaluate progress of the Work.

1.02 DEFINITIONS

A. Day: As used throughout the Contract, the work "day" means "calendar day" unless otherwise indicated.

B. Adverse weather that is normal for the area and the season shall be taken into account in the Construction Schedule.

1.03 QUALITY ASSURANCE

A. Qualifications of Scheduling Personnel: Employ a project scheduler thoroughly trained and experienced in compiling construction schedule data and in preparation of periodic reports.

B. Reliance Upon Accepted Schedule:

1. The construction schedule, as accepted by the Architect, shall be an integral part of the contract and will establish interim Contract completion dates for various activities.

2. Should any activity fail to be completed within (15) fifteen days after the stipulated schedule date, the Owner shall have the right to order the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor, and as set forth in the General Conditions of the Contract.

3. Should any activity be 30 or more days behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner may deem appropriate, and as set forth in the General Conditions of the Contract.

4. Costs incurred by the Owner in connection with expediting construction shall be deducted from the Contract amount.

5. Failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means, will not be considered a precedent for any other activities nor a waiver of the Owner's rights to exercise his rights on subsequent occasions.

1.04 SUBMITTALS

A. Submittal Procedure: Refer to Section 01 33 00 – Submittal Procedures and to Section 01 25 00 – Substitution Procedures.

B. Preliminary Analysis: Within (10) ten days after receipt of notice to proceed, submit one

reproducible copy and four prints of a preliminary Construction Schedule.

C. Construction Schedule: Within (30) thirty days after receipt of notice to proceed, submit one reproducible and four prints of the initial construction schedule.

D. Periodic Reports: On the first working day of each month following submittal of the initial construction schedule, submit four prints of the updated Construction Schedule.

PART 2 - PRODUCTS

2.01 CONSTRUCTION ANALYSIS

A. Graphically show the order and interdependence of activities necessary to complete the Work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram. Show all activities on the diagram. Each activity shall indicate work item breakdown noting duration and responsibility for each item, including, but not necessarily limited to:

1. Project mobilization.
2. Submittal and review of shop drawings and samples.
3. Procurement of equipment and critical materials.
4. Fabrication of special material and equipment. Installation and testing of each by item and by system.
5. Final Cleanup.
6. Final inspection and testing.
7. Activities by the Architect that affect progress, required dates for completion, or both, for each part of the work.

PART 3 - EXECUTION

3.01 PRELIMINARY ANALYSIS

A. Prepare a Preliminary Construction Schedule:

1. Show all activities of the Contractor under this Contract for the period between receipt of notice to proceed and submittal of initial construction schedule.
2. Show the Contractor's general approach to remainder of the Work.
3. Show cost of all activities scheduled for performance before submittal and review of the Construction Schedule.

3.02 INITIAL CONSTRUCTION SCHEDULE

A. Update the Preliminary Construction Analysis for use as the initial Construction Schedule:

1. Clearly indicate the critical path and slack where it occurs.
2. Meet with the Architect and review contents of proposed Construction Schedule.
3. Make all revisions required by the Architect.

3.03 PERIODIC REPORTS

A. On a monthly basis as specified above, submit updated Construction Schedule:

1. Indicate "actual" progress in percent completion for each activity.

2. Provide written narrative summary of revisions causing delay in the program. Explain corrective actions taken or proposed.

B. Revise accepted construction schedule only when revisions are reviewed and approved in advance by the Architect.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.

2. To help ensure that the specified products are furnished and installed in accordance with design intent, submit design product and data in advance for review by the Architect. Review by the Architect and the design consultants in no way relieves the contractor or subcontractor or supplier from providing the products or construction as described in the Contract Documents.

3. Make submittals required by the Contract Documents. Revise and resubmit when requested to establish compliance with the specified requirements.

B. Related Work Described Elsewhere: Additional requirements for submittals are described in other Sections of these Specifications and the General Conditions.

C. Submittals shall be organized by specification section number.

D. Submittals shall be complete. All items indicated in each submittal section shall be contained within the submittal and identified by the Part, Section and subsection. **INCOMPLETE SUBMITTALS WILL BE REJECTED AND ANY DELAY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.**

1.02 QUALITY ASSURANCE

A. Coordination of Submittals: Prior to each submittal, review and coordinate each item being submitted and verify that each item and the submittal conform with the requirements of the Contract Documents. **By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.**

B. Certificates of Compliance:

1. Certify that materials used in the Work comply with specified provisions thereof. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found not to meet specified requirements.

2. Show on each certification the name and location of the Work, name and address of Contractor, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.

3. In addition to the above information, laboratory test reports submitted shall show the date or dates of testing, the specified requirements of which testing was

performed, and results of the test or tests.

1.03 SUBMITTALS

A. Contractor shall submit all shop drawings, samples, requests for substitutions, mix designs, and other items, in accordance with this Section. Submit schedule per Section 01 32 16, Construction Progress Schedule, indicating timing of all required submittals.

B. Prior to submittal of the Contractor's first application for payment, submit a schedule of all submittals required by the Contract Documents.

C. Submittals shall be submitted per the following time schedule for the following specific items. Failure to submit by these dates will be considered sufficient grounds to delay Architect's certification of Contractor's Application for Payment until these items are received in proper order.

1. Within (**10) ten calendar days** after Award of Contract:

a. **All Requests for Substitutions:** After this date, no further requests for substitution will be considered, and Contractor shall be obligated to provide the specified products - **NO EXCEPTIONS.**

2. Within (**15) fifteen calendar days** after Notice to Proceed:

a. Concrete mix design, steel connectors to be embedded in concrete foundations and slabs, materials for underground site plumbing, sewer, storm drainage, and underground site electrical.

3. Within (**20) twenty calendar days** after Notice to Proceed:

a. Hollow metal, door hardware, fire alarm system, fire sprinkler system, glu-lam beams and other structural lumber, structural steel, miscellaneous structural connectors, mechanical, plumbing and electrical materials, and equipment and fixtures.

b. All materials requiring a color selection by the Owner and Architect.

c. All casework.

4. Within (**30) thirty calendar days** after Notice to Proceed:

a. All other items not specifically mentioned in 1, 2 and 3 above.

D. Provide required submittals for the following products to interface with other portions of the Work. Submit data to verify compliance only.

1. For products specified only by reference standard, select product meeting that standard, by manufacturer.

2. For products specified by naming several products or manufacturers, select one of the products or manufacturers named.

3. For products specified by naming one or more products or manufacturers and stating "or other approved', or "or approved equivalent", or other such wording on drawings or within specifications sections, submit a request for substitutions for product or manufacturer which is not specifically named, but only after submitting bid on specified products and systems.

PART 2 - PRODUCTS

2.01 SHOP DRAWINGS AND COORDINATION DRAWINGS

A. Scale and Measurements: Make shop drawings to a scale sufficiently large to shown pertinent aspects of the item and its method of connection to the Work.

B. Type of Prints Required: Submit shop drawings in the black and white PDF (Bluebeam Revu compatible) format.

C. Reproduction of Reviewed Shop Drawings: Printing and distribution of reviewed shop drawings for the Architect's use will be by the Architect.

D. Review comments of the Architect will be shown in Blue Beam Review. The Contractor shall make and distribute copies required for his purposes.

2.02 MANUFACTURERS' LITERATURE

A. General: Where submitted literature from manufacturers includes data not pertinent to the submittal, indicate which portion of the contents is being submitted for review. Submittals not clearly marked will be returned without review.

B. Number of Copies Required: One digital PDF (Bluebeam Revu compatible) copy.

C. The Contractor shall make and distribute copies required for his purposes.

2.03 SAMPLES

A. Accuracy of Samples: Precise article proposed to be furnished shall be labeled with a submittal number, and project name.

B. Number of Samples Required: Submit quantity required to be returned plus one each retained by the Architect, the Inspector, DSA, and the Owner, unless otherwise noted.

C. Reuse of Samples: In situations accepted by the Architect, the Architect's retained sample may be used in the construction as one of the installed items.

D. Size of Samples: Samples shall be 6" x 6", or manufactured width by 12 inches, unless otherwise required by the pertinent Specification section.

2.04 COLORS AND PATTERNS

A. When the precise color and pattern is not specifically described in the Contract Documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts to the Architect for review and selection. Submit data to verify compliance only. If the color is specifically described in the Contract, submit only that color for verification and approval. Digital color submissions are acceptable within the submittal document, however, physical samples must be delivered within one day of date of submittal.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. General: Consecutively number submittals within the respective specification section. Accompany each submittal with transmittal cover letters attached to the end of this Section. Fill out each transmittal cover letter completely, number sequentially, include

specification section, name of supplier or installer, and contact person and telephone number.

B. Internal Identification: On the first page of each copy of each submittal, and elsewhere as required for positive identification, indicate the submittal number.

C. Resubmittals: When material is resubmitted, transmit under a new letter of transmittal and with same submittal number plus a "alphabetic" suffix indicating it's a re-submittal, e.g. 05500-1A, 05500-1B.

D. Submittal Log: Maintain submittal log for the duration of the Contract. Show current status of submittals, with columns showing "approved", "approved as corrected", etc, to match Architect's categories. Make the submittal log available for the Architect's review upon request. Log shall be available and will be reviewed at each project meeting.

3.02 COORDINATION OF SUBMITTALS

A. The Contractor's Project Engineer shall be responsible to coordinate and review all submittals prior to forwarding to Architect. All submittals shall be stamped with Contractor's stamp, signed and dated, stating:

1. Contractor has reviewed submittal for compliance with requirements of the Contract Documents.

2. Contractor has reviewed submittal for proper interfacing with other trades.

B. General: Prior to making submittals, coordinate materials including, but not necessarily limited to:

1. Determine and verify interface conditions, catalog numbers, and similar data,

2. Coordinate with other trades as required,

3. Clearly indicate deviations from requirements of the Contract Documents. Deviations which are <u>not</u> clearly called out as a deviation and which subsequently become a part of an approved submittal can under no circumstances be considered legitimate grounds for an additive change order.

C. Grouping of Submittals: Make submittals in groups containing associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying and the Contractor shall be strictly liable for occasioned delays.

D. Color selections for materials in the same space or same elevation shall be submitted at one time. "Piece meal" submission of the color samples or charts is unacceptable and will be returned awaiting a "complete" submission.

3.03 TIMING OF SUBMITTALS

A. General: Make submittals far enough in advance of dates scheduled for installation to provide time required for reviews; for possible revisions and resubmittals; and for placing orders and securing delivery, and as otherwise required by Part 1.03 of this Section.

B. Architect's Review Time: In scheduling, allow at least 20 calendar days for review by the Architect following his receipt of the submittal or as otherwise may be required under each Specification section. Allow an additional 10 days for reviews involving Architect's consultants or as otherwise may be required under each Specification section.

C. Delays: Delays caused by tardiness in making submittals or resubmittals will not be an acceptable basis for extension of the Contract completion time.

3.04 ARCHITECT'S REVIEW

A. General: Corrections or comments made on Shop Drawings during his review **shall not relieve the Contractor from compliance with requirements of the Drawings and Specifications.** This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades and performing his work in a safe and satisfactory manner.

1. Authority to Proceed: The notations "Furnish as Submitted" or "Furnish as Corrected" authorize the Contractor to proceed with fabrication, purchase, or both or the items so noted, subject to the revisions, if any, required by the Architect's review comments.

2. Revisions: The notation "Revise and Resubmit" or "Submit Specified Item" means make revisions required by the Architect and resubmit. If the Contractor considers required revision to be a change, he shall so notify the Architect as provided for under "Changes" or "Changes in the Work" in the General Conditions. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed by or accepted by the Architect.

3. Rejection: The notation "Rejected" means the submission does not meet requirements of project contract documents. Make new submission meeting project contract documents.

END OF SECTION

Attachment: Contractor’s Form - Shop Drawings / Submittal Transmittal Letter
Cover Sheet referenced herewith.

SHOP DRAWINGS / SUBMITTAL TRANSMITTAL LETTER

School: Project: District: DSA Application No.:	Specification Section: Submittal No.: Submittal Description: Date:

Contractor: **Address:** **Phone No.:** **Contact:**	**Subcontractor:** **Address:** **Phone No.:** **Contact:**

FIRM NAME
Address
Phone No.

SUBMITTAL HISTORY
ARCHITECT/ENGINEER'S SHOP DRAWING STAMP
REMARKS:

SECTION 01 35 16

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Special procedures required for alteration work.

1.02 SCHEDULING

A. Before commencing alteration or demolition work, submit for review by the Architect and approval of the Owner, a Schedule showing the commencement, the order and the completion dates for the various parts of this work.

B. Before starting work relating to existing utilities (electrical, sewer, water, heat, gas, fire lines, etc.) that will temporarily discontinue or disrupt service to the existing building, notify the Architect and the Owner 72 hours in advance and obtain the Owner's approval in writing before proceeding with this phase of the work.

1.03 PROTECTION

A. Make such explorations and probes as are necessary to ascertain required protective measures before proceeding with demolition and removal. Give particular attention to shoring and bracing requirements so as to prevent damage to existing construction.

B. Provide, erect, and maintain catch platforms, lights, barriers, weather protection, warning signs, and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.

C. Provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until protection is provided by new construction.

D. Provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled, or equipment moved.

E. Take necessary precautions to prevent dust and dirt from rising by wetting demolished masonry, concrete, plaster and similar debris. Protect unaltered portions of the existing building affected by the operations under this Section by dustproof partitions and other adequate means.

F. Provide adequate fire protection in accordance with local Fire Authority and with Section 01 50 00, Temporary Facilities and Controls.

G. Do not close or obstruct walkways, passageways or stairways. Do not store or place materials in passageways, stairs, or other means of egress. Conduct operations with minimum traffic interference.

H. Be responsible for damage to the existing structure or contents by reason of the insufficiency of protection provided.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials and workmanship employed in the alterations, unless otherwise shown or specified, shall conform to that of the original work, or to new construction as specified elsewhere in these specifications.

B. If interior finish materials, or existing surfaces to be removed are indicated to be re-used in areas necessary to match existing surfaces. Care in removal and stockpiling shall be exercised to ensure re-use.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. Perform demolition, removal and alteration work with due care, including shoring and bracing. Be responsible for damage which may be caused by such work to part or parts of existing structures or items designated for re-use. Perform patching, restoration, and new work in accordance with applicable technical sections of the Specifications.

B. Materials and items designated to become the property of the Owner shall be as shown. Remove such items with care, under the supervision of the trade responsible for reinstallation; protect and store until required. Replace material and item damaged in its removal with approved similar and equal new material.

C. Materials and items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the Owner's property. Storage or sale of removed items on site will not be permitted.

D. Execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.

E. Where alterations occur, or new and old work join, cut, remove, patch, repair or refinish the adjacent surfaces or so much thereof as is required by the involved conditions, and leave in as a good a condition as existed prior to the commencing of the work. The alteration work shall be performed by the various respective trades which normally perform the particular items of Work.

F. Finish new and adjacent existing surfaces as specified for new work. Clean existing surfaces of dirt, grease, loose paint, etc. before refinishing.

G. Where existing equipment and fixtures are indicated to be re-used, repair such equipment and fixtures and refinish to put in excellent working order. Refinish as directed.

H. Cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.

I. Confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. Cut and fold back existing built-up roofing. Cut and remove insulation. Provide temporary weathertight protection as required until new roofing and flashings are applied.

J. Should any existing conditions, such as deterioration or non-complying construction, be discovered which is not covered by the DSA approved documents, wherein the finished work will not comply with the current Title 24, California Building Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work, shall be submitted to, and approved by DSA,

before proceeding with the repair work.

3.02 CLEANING UP

A. Remove debris as the work progresses. Maintain the premises in a neat and clean condition.

END OF SECTION

SECTION 01 42 19

REFERENCE STANDARDS

PART 1 - GENERAL

1.01 SUMMARY

A. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and methods for testing and reporting on the pertinent characteristics.

B. Provide materials and workmanship which meet or exceed the specifically named code or standard.

C. Deliver to the Architect required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested by the Architect and will generally be required to be copies of a certified report of tests conducted by a testing agency acceptable for that purpose to the Architect.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Specific naming of codes or standards occurs on the Drawings and in other Sections of these Specifications. Comply with laws, ordinances, and regulations of authorities having jurisdiction. Proof of compliance with laws, ordinances, and regulations shall be by the signed approval of the respective authorities having jurisdiction. Costs relative thereto shall be borne by the Contractor.

1.03 QUALITY ASSURANCE

A. Familiarity with Pertinent Codes and Standards: Verify the requirements of the specifically named codes and standards as well as requirements mandated by law, ordinance and authority. Verify that the items procured and installed in this Work meet or exceed the specified requirements.

B. Rejection of Noncomplying Items: The Architect reserves the right to reject items incorporated into the Work which fail to meet such minimum requirements.

1.04 APPLICABLE CODES

A. Work of the project shall conform to the following list of the **2019, Title 24, California Code of Regulations (CCR),** a List of Codes, copies of which shall be maintained at the job site by the Contractor throughout the duration of the work.

B. **Partial List of Applicable Codes as of January 1, 2022**:

1. **2022 California Building Standards Administrative Code** (CAC), Part 1, Title 24, California Code of Regulations (CCR).**

2. **2022 California Building Code** (CBC), Part 2, Title 24, California Code of Regulations (CCR) [2018 International Building Code (IBC) Volumes 1-2 and 2022 California Amendments].

3. **2019 California Electrical Code** (CEC), Part 3, Title 24, California Code of Regulations (CCR) [2017 National Electrical Code and 201 California Amendments].

4. **2019 California Mechanical Code** (CMC), Part 4, Title 24, California Code of Regulations (CCR) [2018 Uniform Mechanical Code and 2019 California Amendments].

5. **2019 California Plumbing Code** (CPC), Part 5, Title 24, California Code of Regulations (CCR) [2018 Uniform Plumbing Code and 2019 California Amendments].

6. **2019 California Energy Code**, Part 6, Title 24, California Code of Regulations (CCR).

7. **2019 California Historical Building Code**, Part 8, Title 24, California Code of Regulations (CCR).

8. **2019 California Fire Code** (CFC), Part 9, Title 24, California Code of Regulations (CCR) [2018 International Fire Code and 2019 California Amendments].

9. **2019 California Existing Building Code**, Part 10, Title 24, California Code of Regulations (CCR).

10. **2019 California Green Building Standards Code**, Part 11, Title 24, California Code of Regulations (CCR).

11. **2019 California Reference Standards Code**, Part 12, Title 24, California Code of Regulations (CCR).

12. Title 19, CCR, Public Safety, State Fire Marshal Regulations.

13. 2016 ASME A17.1 (w/A17.1a/CSA B44a-08 addenda) Safety Code for Elevators and Escalators.

C. **Partial List of Applicable Standards**:

Reference code section for NFPA Standards, 2019 CBC (SFM)

NFPA 13	Automatic Sprinkler Systems, 2016 Edition (CA Amended)
NFPA 14	Standpipes and Hose Systems, 2016 Edition (CA Amended)
NFPA 17	Dry Chemical Extinguishing Systems, 2017 Edition
NFPA 17a	Wet Chemical Extinguishing Systems, 2017 Edition
NFPA 20	Stationary Pumps for Fire Protection, 2016 Edition
NFPA 22	Water Tanks for Private Fire Protection, 2018 Edition
NFPA 24	Private Fire Service Mains & their Appurtenances, 2016 Edition
NFPA 25	Standard for Inspection, Testing & Maintenance of Water-based Fire Protection Systems, 2017 Edition
NFPA 37	Installation & Use of Stationary Combustion Engines & Gas Turbines, 2018 Edition

NFPA 72	National Fire Alarm & Signaling Code, 2019 Edition (CA Amended)
NFPA 80	Fire Doors and Other Opening Protectives, 2019 Edition
NFPA 92	Standard for Smoke Control Systems, 2018 Edition
NFPA 101	Life Safety Code, 2018 Edition
NFPA 110	Emergency & Standard Power Systems, 2019 Edition
NFPA 170	Standard for Fire Safety & Emergency Symbols, 2018 Edition
NFPA 221	Standard for High Challenge Fire Walls, Fire Walls & Fire Barrier Walls, 2018 Edition
NFPA 253	Critical Radiant Flux of Floor Covering Systems using a Radiant Heat Energy Source, 2019 Edition
NFPA 2001	Clean Agent Fire Extinguishing Systems, 2018 Edition
ICC 300	ICC Standards on Bleachers, Folding and Telescoping Seating and Grandstands, 2017 Edition
ICC-ES AC77	Acceptance Criteria for Smoke Containment Systems used with Fire-Resistance-Rated Elevator Hoistway Doors & Frames,
SFM Std. 12-10-1	Power Operated Exit Doors, 2019 Edition
SFM Std. 12-10-2	Single-Point Latching or Locking Devices, 2019 Edition
SFM Std. 12-10-3	Emergency Exit & Panic Hardware, 2019 Edition
SFM Std. 12-7A	Materials and Construction Methods for Exterior Wildfire Exposure, 2019 Edition
UBC Std. 15-2	Test Standard for Determining the Fire Retardancy of Roof-Covering Materials
UL 38	Manual Signaling Boxes for Fire Alarm Systems, 2008 Edition
UL 268	Smoke Detectors for Fire Protective Signaling Systems, 2009 Edition
UL 268A	Smoke Detectors Duct Applications, 2016 Edition
UL 294	Access Control Systems Units, 2018 Edition
UL 300	Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment, 2019 Edition
UL 305	Standard for Panic Hardware, 2012 Edition
UL 346	Waterflow Indicators for Fire Protective Signaling Systems, 2016 Edition
UL 464	Audible Signal Devices for Fire Alarm & Signaling Systems, including Accessories, 2016 Edition

UL 521	Heat Detectors for Fire Protective Signaling Systems, 1999 Edition (Amended with Revision through July 20, 2005)
UL 864	Control Units and Accessories for Fire Alarm Systems, 2014 Edition
UL 2034	Single & Multiple Station Carbon Monoxide Alarms, 2017 Edition

Reference code section for NFPA Standards – 2019 CBC (SFM) Chapter 35. See Chapter 35 for State of California amendments to NFPA Standards

**** California Administrative Code, Part 1, Chapter 10, Administrative Regulations for the California Energy Commission (CEC).**

1.05 REFERENCE STANDARDS

A. Standards referenced in the Specifications are usually referred to by the abbreviation of the organization's name and the designation of the document (e.g., ASTM A36). Documents in common use may be referred to by their own designation (e.g., the California Electrical Code is published by the National Fire Protection Association as NFPA-70 but is referred to as CEC, and is part of a series of documents or standards referred to as the National Fire Code). References are to the latest issue of the publication available on the date stipulated for the receipt of bids.

STANDARDS ORGANIZATIONS

AA	Aluminum Association
AAMA	American Architectural Manufacturer's Association
ASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute, Inc.
APA	APA-The Engineered Wood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Protection Association
AWPB	American Wood Preservers' Bureau

AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
CBC	California Building Code, 2019
CDA	Copper Development Association
CEC	California Electrical Code
CEQA	California Environmental Quality Act
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
CMC	California Mechanical Code - See IAPMO
CPC	California Plumbing Code - See IAPMO
CPSC	Consumer Product Safety Commission
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard of U.S. Dept. of Commerce
CTIOA	Ceramic Tile Institute of America (former CTI)
CSMA	Chemical Specialties Manufacturing Association
FGMA	Flat Glass Marketing Association
FM	Factory Mutual Global (former FMS)
FS	Federal Specification
GA	Gypsum Association
HI	Hydraulic Institute
HRI	Hydraulics Research Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICC	International Code Council (former ICBO)
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society of North America
MIL-STD	Military Specifications (former MIL)
ML/SFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry

NAAMM	National Association of Architectural Metal Manufacturers
NIST	National Institute of Standards and Technology (former NBS)
NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers Association
N FLUID PA	National Fluid Power Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NWWDA	National Wood Window and Door Association
PS	Voluntary Product Standard (of NIST former NBS)
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SSPC	The Society for Protective Coatings (former SSPC)
TCNA	Tile Council of North America, Inc. (former TCA)
TSIB	Technical Services Information Bureau (former WLPDIA)
UL	Underwriters Laboratories, Inc.
WI	Woodwork Institute (former WIC)
TITLE	Title 24, California Code of Regulations, Part 1, 2, 3, 4, 5, 6, 8, & 9
TITLE	Title 19, California Code of Regulations

1.06 REFERENCE COPIES

A. A minimum of one copy of Codes, Regulations, and Standards referenced in the drawings or the specifications, or applicable to the work, shall be furnished to the Owner's Representative at least (2) two weeks prior to the commencement of work affected by such codes, regulations or standards.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01 45 23

TESTING AND INSPECTING SERVICES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Cooperate with the Owner's selected testing agency, the Owner's assigned Inspector, and others responsible for testing and inspecting the Work, and assist the Owner by coordinating such testing and inspecting services as specified in this Section and/or elsewhere in the Contract Documents.

B. Related Work Specified Elsewhere:

1. Requirements for testing may be required in other Sections of these Specifications.

2. Where no testing requirements are specified or required by reference standards or authorities having jurisdiction, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described herein.

C. Work Not Included:

1. The Owner will select a pre-qualified independent testing laboratory and Inspector as approved by the Division of the State Architect (DSA), Department of General Services, Architect and Structural Engineer.

2. The Owner will pay for initial services of the testing laboratory as further described hereinafter.

1.02 QUALITY ASSURANCE

A. The Owner will select an independent testing laboratory to conduct the tests. Selection of the material required to be tested shall be by the laboratory or the Owner's representative and not by the Contractor.

B. Qualifications of Testing Laboratory: The testing laboratory, approved by DSA, shall be qualified to the Owner's acceptance in accordance with ASTM E329. The testing laboratory shall be qualified by the Division of the State Architect.

C. Codes and Standards: Testing, when required, will be in accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials and other organizations or agencies which publish recognized codes, standards, or tests. Refer to Article 3.04 - Required Testing of this Section.

1.03 TEST REPORT DISTRIBUTION

A. Promptly process and distribute required copies of test reports and related instructions to ensure necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.

B. One copy of Test Reports shall be forwarded to the Project Inspector by the testing agency. Such reports shall include tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of Title 24 and with the approved specifications. Test reports shall show the specified design strength. They shall also state whether or not the material or materials tested comply with requirements.

C. Each Testing Agency shall submit to the Division of the State Architect a verified report in duplicate covering tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, including tests up to that time, and at the completion of the project. For additional information, refer to DSA PR13-01.

1.04 PAYMENT FOR TESTING SERVICES

A. Initial Services: The Owner will pay for initial testing and inspection except as specifically modified herein- after or as specified otherwise in technical sections, provided the results of inspection indicate compliance with the Contract Documents.

B. Retesting: When initial tests or inspection indicate noncompliance with the Contract Documents, subsequent retesting or re-inspection occasioned by the noncompliance shall be performed by the same testing laboratory or Inspector and the costs thereof will be deducted by the Owner from the Contract Sum. Retesting and re-inspection will continue until test or inspection results indicate compliance.

C. Code Compliance Testing: Inspections and tests required by codes or ordinances, or by authorities having jurisdiction and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Owner, but backcharged to the Contractor in case of retesting due to non-compliance.

D. Specified Inspections and Tests: Tests and inspections specified in the Specifications, directly or by reference, shall be coordinated by the Contractor at his expense and paid for by the Owner. Corrections of noncompliance and test failures shall be paid for by the Owner but shall be backcharged to the Contractor. Re-inspection and retesting shall be in accordance with paragraph 1.04-B.

E. Contractor's Convenience Testing: Inspecting or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of and at the expense of the Contractor.

1.05 INSPECTION BY THE OWNER

A. The Owner and his representatives will have access, for the purpose of inspection, to parts of the work and to the shops wherein the work is in preparation, and the Contractor shall maintain proper facilities and provide safe access for such inspection.

B. The Owner shall have the right to reject materials and workmanship which are defective, and to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the Owner may correct rejected work and charge the expense to the Contractor.

C. Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish necessary facilities, labor and materials. If such work is found to be defective in respect due to fault of the Contractor or his subcontractor, he shall defray expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the additional cost of labor and material necessarily involved in the examination and replacement will be allowed the Contractor.

1.06 OWNER'S INSPECTOR

A. An Inspector employed by the Owner, approved by DSA in accordance with the requirements of the State of California Administrative Code, Title 24, Part 1, and qualified in accordance with Division of the State Architect will be assigned to the work. Reference DSA IR A-7 and IR A-8 for project Inspector certification and approval and duties and

performance rating by DSA. The inspector duties are specifically defined in Title 24, Part 1, Section 4-342, reprinted herein:

" 4-342 Duties of the Project Inspector

(a) **General. The project inspector shall act under the direction of the architect or registered engineer and under the supervision of the enforcement agency.**

(b) **Duties. The general duties of the project inspector in fulfilling project inspection responsibilities are as follows**:

1. **Continuous inspection requirement. The project inspector must have actual personal knowledge obtained by personal and continuous inspection of the work of construction in all stages of its progress that the requirements of the approved plans and specifications are being completely executed**.

   Continuous inspection means complete inspection of every part of the work. Work, such as concrete work or masonry work which can be inspected only as it is placed, shall require the constant presence of the inspector. Other types of work which can be completely inspected after the work is installed may be carried on while the inspector is not present. In any case, the inspector must personally inspect every part of the work. In no case shall the inspector have or assume any duties that will prevent the inspector from giving continuous inspection. DSA may require verification from the project inspector of time spent at the construction site during all phases of the work.

   The project inspector may obtain personal knowledge of the work of construction, either on-site or off-site, performed under the inspection of special inspectors and/or assistant inspectors (Section 4-333). The project inspector may obtain personal knowledge that materials used in the construction conform to the DSA approved documents by verifying test reports performed by DSA accepted testing facilities, verifying materials certifications shipped with the materials, or other means as specified in the DSA approved documents and referenced codes and standards. The project inspector shall be responsible for monitoring the work of the special inspectors and testing laboratories to ensure that the testing program is satisfactorily completed. The project inspector shall be responsible for supervising the work of all assistant inspectors in accordance with Section 4-333(d). The exercise of reasonable diligence to obtain the facts shall be required.

2. **Relations with the architect or engineer. Any uncertainties in the inspector's comprehension of the plans and specifications or inconsistencies or seeming errors in the approved construction documents shall be reported promptly to the architect or registered engineer for interpretation and instructions. In no case shall the instruction of the architect or registered engineer be construed to cause work to be done which is not in conformity with the DSA approved documents.**

3. **Job file. The project inspector shall always keep and maintain a file on the job with all of the following:**

A. DSA approved plans and specifications including DSA approved addenda and all construction change documents.

B. Applicable parts of the edition of Title 24, C.C.R. referred to in the plans and specifications, and any pertinent reference standards.

C. DSA approved statement of structural tests and special inspections.

D. Copies of the project inspector's semi-monthly reports.

E. Copies of all deviation notices and a log of all deviation notices. The log shall reference all applicable details and specification sections related to nonconforming materials and workmanship including field change documents, change orders, addenda and deferred submittals. The log shall describe all corrective actions taken whether performed in accordance with DSA approved documents or not, the current status of each deviation issue and the resolution for each issue.

F. Log documenting all significant communications with the design professionals, contractors, DSA representatives and other persons involved in the project. Significant communications include, but are not limited to, interpretations, clarifications or directions from the design professionals, issues identified by DSA representatives, directives from the school district, and start notices from the contractor.

G. Laboratory test and inspection reports.

H. Contractor's request for information (RFI) and responses to the RFIs.

I. Interpretations and clarifications from the design professional in general responsible charge.

J. Special inspection reports.

K. Concrete placing operation records showing the time and date of placing concrete and the time and date of removal of forms in each portion of the structure.

L. Welding operation records including identification marks of welders, lists of defective welds, manner of correction of defects, etc.

M. Pile driving operation records including penetration under the last 10 blows for each pile when piles are driven for foundations.

N. Verified reports for all persons required by this code for file verified reports.

O. Any other applicable documents required to provide a complete record of construction.

The job file shall be kept on the job site until the completion of the project and shall be readily accessible to DSA personnel during site visits. A copy of the job file shall be made available to DSA upon request. The job file, with exception of building codes and reference standards, shall be made a part of the permanent school district records.

4. **Project inspector's semimonthly reports.** The project inspector shall keep the architect or registered engineer thoroughly informed as to the progress of the work by making semimonthly reports in writing as required in Section 4-337.

5. **Notifications to DSA.** The project inspectors shall notify DSA by email at the following times:

   A. When construction work on the project is started or restarted if previously suspended per Item D below.

   B. At least 48 hours in advance of the time when foundation trenches will be complete, ready for footing forms.

   C. At least 48 hours in advance of the first placement of foundation concrete and 24 hours in advance of any subsequent and significant concrete placement.

   D. When all work on the project is suspended for a period of more than one month.

6. **Deviations.** The project inspector shall notify the contractor, in writing, of any deviations from the approved plans and specifications which are not immediately corrected by the contractor when brought to the contractor's attention. Copies of such notice shall be forwarded immediately to the architect or registered engineer, and to DSA.

   Failure on the part of the project inspector to notify the contractor of deviations from the approved plans and specifications shall in no way relieve the contractor of any responsibility to complete the work covered by his or her contract in accordance with the approved plans and specifications and all laws and regulations.

7. **Inspector verified reports.** The project inspector shall make and submit directly to DSA verified reports (see Section 4-336). The project inspector shall prepare and deliver to DSA detailed statements of fact regarding materials, operations, etc., when requested.

8. **Performance of duties.** The inspector shall perform all duties and render all services with honestly. Inspectors who fail to carry out their duties in an ethical manner or who engage in illegal activities may be subject to disciplinary action as defined in Section 4-342(d).

(c) **Violations.** Failure, refusal or neglect on the part of the inspector to notify the contractor of any work which does not comply with the requirements of the approved plans and specifications, or failure, refusal or neglect to report immediately, in writing, any such violation to the architect or registered engineer, to the school board, and to DSA shall constitute a violation of the Act and shall be cause for DSA to take action which may result in withdrawal of the inspector's approval. The State Architect or designee may take appropriate action as described in Section 4-342(d) when any of the following conditions exist:

1. The inspector has failed to fulfill any of the relevant requirements of this code.

2. The inspector has been convicted of a crime considered to be substantially related to the qualifications, functions or duties of an inspector in a manner consistent with the public health, safety or welfare.

(d) **Disciplinary actions.** Failure to satisfactorily perform inspector duties identified in this code may be cause for DSA to take action(s) which included but are not

limited to the following:

1. Requiring the inspector to meet with DSA in the regional office for counseling.
2. Requiring the inspector to attend training classes.
3. Withdrawal of the inspector's approval for the project.
4. Downgrading of the inspector's class of certification.
5. Suspension of the inspector's certification.
6. Withdrawal of the inspector's certification.

(e) Notice of disciplinary actions. Notice of disciplinary action shall specify the grounds for the actions taken.

(f) Criteria for reinstatement. When considering reversal of any disciplinary action taken pursuant to Section 4-342(d), the State Architect or designee evaluating the reinstatement of an inspector's approval for a project, or certification, may consider the following criteria:

1. Nature and severity of the act(s) or offense(s).

2. The time that has elapsed since the commission of the act(s) or offense(s).

3. If applicable, evidence of expungement proceedings pursuant to Section 1203.4 of the Penal Code.

(g) Filing an appeal.

1. The State Architect or his/her designee has the discretion to immediately order that approval of a project inspector for a project, or certification, be temporarily invalidated or to seek additional information, pending a final determination by the State Architect or his/her designee pursuant to Section 4-342©. The decision to temporarily invalidate approval of a project inspector for a project, or certification, will be made on a case by case basis, as necessary to ensure public health, safety and welfare.

2. The State Architect or his/her designee shall provide the appellant with written notice that their approval for a project, or certification, has been temporarily invalidated as of a specific date or is subject to suspension or denial pursuant to Section 4-342(d), pending a final determination. The written notice shall include the reasons for the action being taken or investigated, as applicable, and provide a summary of the facts and allegations. Service of the written notice of the proposed action shall be confirmed by certified mail.

3. Written notice of the final determination by the State Architect or his/her designee shall be confirmed by certified mail within 60 days from the initial written notification. The time to render his/her determination may be extended an additional 30 days, as necessary, to consider any additional supporting documentation provided to the State Architect relevant to the issue being investigated.

4. An appeal of an action by the State Architect or his/her designee to suspend approval of a project inspector for a project, or certification, or to deny renewal of a certification must be filed in wiring with DSA within 60 days of the date posted on the certified service of the written notice of the final determination from the State Architect. Unless a hearing is specifically requested as provided in Section 4-342(g)6 the appeal will be based on an analysis of the materials available.

5. Within 60 days from the date of receipt of the appeal the State Architect or his/her designee shall render his/her determination on the appeal. The time to render the determination may be extended an additional 30 days, as necessary to conclude any research or investigation required, at the discretion of the State Architect or his/her designee.

6. Should an individual submit a written request for a hearing, the State Architect may designate an appropriate hearing officer to conduct the hearing. Written notice of the date and time of the hearing and the reasons for the action being taken or investigated, as applicable, shall be provided to the appellant. The hearing shall be limited in scope to the actions stated in the written notice. The appellant may bring a representative of his/her choice.

7. The appellant shall be notified in writing of the determination made by State Architect or his/her designee regarding the appeal. Service of the written notice of the decision shall be confirmed by certified mail.

8. Any appeal of a decision rendered by the State Architect or his/her designee to rescind approval for a project or certification may be appealed to the Superior Court.

Authority: Education Code Sections 17310 and 81142.

Reference: Education Code Sections 17309, 17311, 81141 and 81143. "

B. The work of construction in stages of progress shall be subject to the personal continuous observation of the Inspector as continuous observation is defined by Title 24. He shall have free access to all parts of the work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from obligation to fulfill this Contract.

1.07 OWNER'S OTHER PERSONNEL

A. From time to time, other personnel in the employ of the Owner may inspect the Work when the Work is in progress but shall have no authority to direct the Contractor or request changes in the Work except as may be provided elsewhere in the Contract Documents.

1.08 REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT

A. Architect shall have access to the site in accordance with Title 24.

B. Field Engineers and Inspectors from DSA. Structural Safety Section, Fire & Life Safety Review and Access Compliance shall have access to the site in accordance with Title 24.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY AND INSPECTORS

A. Inspectors and representatives of the testing laboratory shall have access to the work. Provide facilities for such access in order that the testing, inspection, and the obtaining of samples may be done properly.

B. Contractor shall deliver material specimens to the Owner's testing lab, which must by terms of the Contract be tested prior to inclusion in the Project, at least (45) forty five days prior to scheduled delivery to the job site.

C. Material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.

3.02 TAKING SPECIMENS

A. Field specimens and samples for testing, unless otherwise provided in these Contract Documents, shall be selected and taken by the Testing Laboratory or Inspector and not

the Contractor. Sampling equipment and personnel will be provided by the testing laboratory. Deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory. Soil samples for approval of import fill shall be delivered to the Testing Laboratory by the Contractor, as directed by the Testing Laboratory.

3.03 SCHEDULES FOR TESTING

A. Establishing Schedule:

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.

2. Provide required time within the Construction Schedule.

B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the testing laboratory as required.

C. Adherence to Schedule: When the testing laboratory is ready to test according to the determined schedules, but is prevented from testing or taking specimens due to incompleteness of the work, extra charges for testing attributable to the delay may be back-charged to the Contractor and will be deducted by the Owner from the Contract Sum.

3.04 REQUIRED TESTING

All Testing and Inspection requirements shall comply with the Stamped Approved DSA-103, in accordance with California Building Code, Title 24, Part 2.

Commented [BM1]: If no 103 is required, replace text in this section as follows:

There are no Testing and Inspecting items requiring a DSA 103 form.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: General requirements for delivery, storage, and handling of materials and equipment applicable to the product sections of this specification and necessary for the construction of the Project.

B. Related Sections:

1. Section 01 25 00 – Substitution Procedures
2. Section 01 33 00 – Submittal Procedures

1.02 GENERAL

A. Material and Equipment Incorporated into the Work:

1. Conform to applicable specification and standards.
2. Comply with size, make, type, and quality specified.

B. Manufactured and Fabricated Products:

1. Design, fabricate and assemble in accordance with the best engineering and shop practices.

2. Manufacture like parts of duplicate units to standard sizes and gages for interchangeability.

3. Two or more items of the same kind shall be identical, by the same manufacturer.

C. Reused Materials: Where the contract documents indicate that existing materials may be reused, such materials shall be cleaned and reincorporated in the work.

1. Materials to be reused shall be approved for reuse by the Inspector.

D. Supplementary materials not specifically described in each Section, but required for a complete and proper installation of the Work, shall be new, first quality of their respective kinds, and subject to review and acceptance by the District.

1.03 DELIVERY

A. Arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation. Notify the Inspector of Record, in writing, when items are delivered to the site, so he may inspect and verify quality and quantities delivered are as intended.

B. Coordinate deliveries to avoid conflict with work and conditions at site, taking into consideration:

1. Work of the Contractors, or Owner.
2. Limitations of storage space.
3. Availability of equipment and personnel for handling products.
4. Owner's use of premises.

C. Deliver products in undamaged condition in original containers or packaging, and with identifying labels intact and legible.

D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts, and to facilitate assembly.

E. Immediately on delivery, inspect shipment to ensure:

1. Product complies with requirements of Contract Documents and reviewed submittals.

2. Quantities are correct.

3. Containers and packages are intact, and labels are legible.

4. Products are undamaged and properly protected.

F. The District reserves the right to observe delivered materials, to review the accompanying bills of lading, and to reject the following:

1. Materials not identifiable as accepted products of the accepted manufacturer.

2. Materials exhibiting shelf-lives in excess of those stipulated by the manufacturer.

3. Materials not bearing the appropriate label of Underwriters Laboratories (UL), where applicable.

4. Materials in opened or excessively damaged containers.

5. Materials exhibiting evidence of moisture, organic matter, or other adulterants.

G. In the event of damage or rejection by the District for stipulated cause, immediately make repairs and replacements necessary to the acceptance of the Architect and at no additional cost to the Owner.

1.04 STORAGE

A. Payment will not be made by the Owner for materials stored off-site, until such time as the materials are incorporated into the Work.

B. Store products immediately on delivery, store in accordance with manufacturer's instructions and as further required by the Owner's Storm Water Pollution Prevention Plan and protect until installed in the Work.

C. Store products subject to damage by elements in weather tight enclosures.

1. Maintain temperatures within limits recommended by manufacturer's instructions.
2. Provide humidity control for sensitive products, as required by manufacturer.
3. Store unpacked products in a manner accessible for inspection.

D. Exterior Storage:

1. Provide substantial platforms, blocking, or skids to support fabricated products above ground and prevent soiling or staining.

a. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.

b. Comply with requirements of Owner's, Storm Water Pollution Prevention Plan.

2. Store loose granular materials on solid paved surfaces or provide plywood platforms to prevent mixing with foreign matter.

a. Provide surface drainage to prevent flow or ponding of rainwater.
b. Prevent mixing of refuse or chemically injurious materials or liquids.
c. Comply with requirements of Owner's Storm Water Prevention Plan.

1.05 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.
2. Required environmental conditions are maintained on a continuing basis.
3. Surfaces of products exposed to elements are not adversely affected.

B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.

1.06 PROTECTION AFTER INSTALLATION

A. Provide protection of installed products to prevent damage from subsequent operations. Remove protection materials when no longer needed, prior to completion of work.

B. Control traffic to prevent damage to equipment and surfaces.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Administrative and procedural requirements for cutting and patching.

B. Related Work Specified Elsewhere:

1. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

2. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 21 through Division 28, Sections for other requirements and limitations applicable to cutting and patching plumbing, mechanical and electrical installations.

1.02 SUBMITTALS

A. Before commencing alteration or demolition work, submit for review by the Architect and approval of the Owner, a Schedule showing the commencement, the order and the completion dates for the various parts of this work. Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required and how it is to be performed; 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 and other significant visual elements.

3. List products to be used and firms or entities that will perform Work.

4. Indicate dates when cutting and patching is to be performed.

B. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted. Before starting work relating to existing utilities (electrical, sewer, water, heat, gas, fire lines, etc.) that will temporarily discontinue or disrupt service to the existing building, notify the Architect and the Owner 72 hours in advance and obtain the Owner's approval in writing before proceeding with this phase of the work.

C. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure. All cutting of structural elements subject to acceptance of the Structural Engineer and approval of the Division of the State Architect prior to execution.

D. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory. Subject to approval by the Division of the State Architect.

E. All cutting and patching of existing hard scape or landscaping for installation or modification, shall be reinstalled in kind. When new utilities are shown or utility

modifications are shown on the plans and specific cutting and patching notes are not shown, the contractor shall assume that the existing hardscape shall be saw cut, material removed and disposed, trenches prepared in accordance with local water district or county regulations, and all existing hardscape shall be returned to existing condition or better.

1.03 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut or notch any structural elements unless specifically detailed on the Drawings.

B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

D. If possible, retain the original installer or fabricator to cut and patch the following categories of exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:

Processed concrete finishes
Stonework and stone masonry
Ornamental metal
Matched-veneer woodwork
Preformed metal panels
Window wall system
Stucco and ornamental plaster
Acoustical ceilings
Terrazzo
Finished wood flooring
Carpeting
Aggregate wall coating
Wall covering
Swimming pool finishes
HVAC enclosures, cabinets or covers

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use materials that are identical to existing materials. Materials and workmanship employed in the alterations, unless otherwise shown or specified, shall conform to that of the original work, or to new construction as specified elsewhere in these specifications. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

B. It is intended that interior finish materials, or existing surfaces to be removed, be re-used insofar as reasonable in areas necessary to match existing surfaces. Care in removal and stockpiling shall be exercised to ensure re-use.

PART 3 - EXECUTION

3.01 INSPECTION

A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

B. Before proceeding, meet at the site with entities 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.

3.02 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Make such explorations and probes as are necessary to ascertain required protective measures before proceeding with demolition and removal. Give particular attention to shoring and bracing requirements so as to prevent damage to existing construction.

C. Provide, erect, and maintain catch platforms, lights barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.

D. Provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.

E. Provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled, or equipment moved.

F. Take necessary precautions to prevent dust and dirt from rising by wetting demolished masonry, concrete, plaster and similar debris. Protect unaltered portions of the existing building affected by the operations under this Section by dustproof partitions and other adequate means.

G. Provide adequate fire protection in accordance with local Fire Departments, and with Section 01 50 00.

H. Do not close or obstruct walkways, passageways or stairways. Do not store or place materials in passageways, stairs, or other means of egress. Conduct operations with minimum traffic interference.

I. Be responsible for damage to the existing structure or contents by reason of the insufficiency of protection provided.

J. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

1. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

2. Take precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 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.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required 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 diamond core drill. Provide pilot holes at corners and do not overcut.

4. Comply with requirements of applicable Sections of Division 2 where cutting and patching requires excavating and backfilling.

5. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specific tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken containing the patch, after the patched area has received primer and second coat.

4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

D. Perform demolition, removal and alteration work with due care, including shoring, bracing, etc. Be responsible for damage which may be caused by such work to part or parts of existing structures or items designated for re-use. Perform patching, restoration and new work in accordance with applicable technical sections of the Specifications.

E. Materials and/or items designated to become the property of the Owner shall be as shown. Remove such items with care, under the supervision of the trade responsible for reinstallation; protect and store until required. Replace material and/or item damaged in its removal with approved similar and equal new material.

F. Materials and/or items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the Owner's property. Storage or sale of removed items on site will not be permitted.

G. Execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.

H. Where alterations occur, or new and old work join, cut, remove, patch, repair or refinish the adjacent surfaces or so much thereof as is required by the involved conditions, and leave in as a good a condition as existed prior to the commencing of the work. The alteration work shall be performed by the various respective trades which normally perform the particular items of work.

I. Finish new and adjacent existing surfaces as specified for new work. Clean existing surfaces of dirt, grease, loose paint, etc. before refinishing.

J. Where existing equipment and fixtures are indicated to be re-used, repair such equipment and fixtures and refinish to put in perfect working order. Refinish as directed.

K. Cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.

L. Confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. Cut and fold back existing built-up roofing. Cut and remove insulation, etc. Provide temporary weathertight protection as required until new roofing and flashings are applied.

3.04 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Cleaning throughout the construction period, and final project cleaning after acceptance tour "**Punch List**" has been completed.

B. Related Work Described Elsewhere: In addition to standards specified herein, comply with requirements for cleaning as described in other sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

B. Codes and Standards: In addition to the requirements specified herein, comply with pertinent requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

A. Use cleaning materials and equipment which are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned.

B. Do not power wash concrete/masonry surfaces.

PART 3 - EXECUTION

3.01 PROGRESS CLEANING

A. General:

1. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.

2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work. Debris shall be removed from the site and disposed of in a lawful manner. Disposal receipts or dump tickets shall be furnished to Architect upon request.

3. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from the job site.

4. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

B. Site:

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris,

and waste material. Remove items to the place designated for their storage. Combustible waste shall be removed from the site. Flammable waste shall be kept in sealed metal containers until removed from the site.

2. Weekly, and more often if necessary, inspect, arrangements of materials stored on the site; restack, tidy, or otherwise service arrangements to meet the requirements specified above.

3. Maintain the site in a neat and orderly condition.

C. Structures:

1. Weekly, and more often if necessary, inspect the structures and pick up scrap, debris, and waste material. Remove items to the place designated for their storage.

2. Weekly, and more often if necessary, sweep interior spaces clean.

a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a handheld broom, i.e., "broom-clean".

3. As required preparatory to installation of succeeding materials, clean the structures of pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the required cleanliness.

4. Following the installation of finish floor materials, clean the finish floor daily and more often if necessary, and while work is being performed in the space in which finish materials have been installed.

a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material, i.e., "vacuum clean".

3.02 FINAL CLEANING

A. Definition: Except as otherwise specifically provided, "clean", for the purpose of the Article, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials, i.e., "scrub and polish clean".

B. General: Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described above.

C. Site: Unless otherwise specifically directed by the Architect, water and broom clean paved areas on the site and public paved areas directly adjacent to the site. Remove resultant debris.

D. Structures:

1. Exterior: In areas affected by the work under this contract, visually inspect exterior surfaces and remove traces of soil, waste material, smudges, and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure.

In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.

2. Interior: In areas affected by the work under this contract, visually inspect interior surfaces and remove traces of soil waste material, smudges, and other foreign matter. Remove traces of splashed materials from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only the cleaning materials and equipment instructed by the manufacturer of the surface material.

3. Glass: Clean glass inside and outside.

4. Polished surfaces: On surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished. Glossy surfaces shall be cleaned and shined as intended by the manufacturer.

E. Timing: Schedule final cleaning after the **Final Punch List** has been completed by the Architect to enable the Owner to accept a completely clean project.

3.03 CLEANING DURING OWNER'S OCCUPANCY

A. Should the Owner occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be determined by the Architect in accordance with the General Conditions of the Contract.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Operations and submittals required to establish Substantial Completions, Project Acceptance, and filing of Notice of Completion.

B. Contract Completion Date is the day established by the Agreement, the Special Conditions, and the Notice to Proceed as the calendar date by which all Work must be completed in accordance with the Contract Documents. Once established, the Contract Completion Date can only be altered by Change Order. If Work is not complete in accordance with the Contract Documents by the Contract Completion Date, Contractor is obligated to pay liquidated damages to the Owner. In accordance with the terms of the Contract.

C. Substantial Completion: The Date of Substantial Completion is the date on which the Architect certifies to the Owner that construction is sufficiently complete, in accordance with the Contract Documents, that the District may occupy the Project for the use intended, and all agencies and authorities have provided written acceptance of the portions of the Work over which they have jurisdiction.

D. Project Acceptance: The District will accept completion of the Contract after the entire Work shall have been completed to the satisfaction of the District and after issuance of the Certificate of Substantial Completion. The Work may only be accepted as complete by formal action of the Governing Board of the School District. Acceptance of the Project by the Governing Board establishes the formal and official Completion Date for the Project, to be compared against the Contract Completion Date. Project Acceptance must occur prior to Contract Completion Date to preclude assessment of liquidated damages.

E. Notice of Completion: The date of record for the Notice of Completion shall be the date stamped on the Notice by the County Recorder at the time the County Recorder registers the Notice (note: this is normally not the same date as the date the Owner actually files the Notice of Completion with the Recorder office).

1.02 CLOSEOUT SCHEDULE AND PROCEDURE

A. Requirements Preparatory to Project Acceptance:

1. Contractor shall deliver certifications to Architect that no new materials containing asbestos have been included in the work.

2. Temporary facilities shall be removed from site as specified in Section 01 50 00, Temporary Facilities and Controls.

3. Entire site shall be thoroughly cleaned of all construction debris.

4. Record drawings shall be completed, signed by Contractor and Inspector and submitted to Architect as specified in Section 01 78 39 – Project Record Documents.

5. Guarantees and warranties shall be submitted to Architect as specified in General conditions and Section 01 78 30 – Warranties.

6. Contractor's Final Verified Report (Form DSA-6) and other Reports and Affidavits required by the Division of State Architect shall be submitted.

7. Operating and maintenance data shall be submitted and instruction sessions completed as outlined in Section 01 78 23 – Operating and Maintenance Data and as required in CBC 2022 Section 110.3.10.2.

8. Contractor to provide a copy of cleaning and maintenance recommendations for countertops to the underneath side of furniture, in addition to requirements listed above and outlined in Section 01 78 23 – Operating and Maintenance Data.

B. Project Acceptance Requirements, Division of the State Architect:

1. Upon completion of construction of the project, the following reports are required to be submitted before the Division of the State Architect will issue a certification of compliance letter for the work:

a. A copy of the Notice of Completion filed by the School District.

b. Final Verified Report Form DSA 6 AE and DSA 6 C certifying all work is 100% complete from the Architect, Structural Engineer, Mechanical Engineer and the Electrical Engineer. Final retention payment shall not be released until DSA 6 C is uploaded into the DSA project file.

c. Contractor's Documents and Field Reports:

1) Final Verified Report Form DSA 6 C, certifying all work is 100% complete, from the Contractors (or Contractors), the Inspector of Record, and Special Inspector(s).

2) Verified Reports of Testing and Inspection as specified on the approved drawings an specifications (i.e., Final Laboratory Report, Welding, Glued-laminated Timber, etc.).

3) Weighmaster's Certificate (if required by approved drawings and specifications).

4) If responsibility was changed in any area during construction, the change must be supported by appropriate documentation and termination reports filed by the individuals originally charged with responsibility.

C. Procedure for Project Acceptance:

1. Contractor shall complete all Work as required by the Contract Documents, to the best standards of the industry and the trades involved. It shall be the Contractor's responsibility to provide a new, complete, properly operating, professionally finished, detailed, cleaned, high-quality project. There shall be no loose, untrue, or ill-fitting materials, unsightly gaps, voids, or holes, misalignments, mis-adjustments, shoddy workmanship, or damaged, missing, inoperable, or incomplete work. Work shall be free of smudges, spots, stains, dirt, nicks, tears, cracks, scratches, paint runs, flaws, over sprays, and all other unsightly blemishes.

2. Completion lists and correction lists for items described in the paragraph above, as opposed to short lists of a few minor corrective items that may have inadvertently been missed by the Contractor, shall be the responsibility of the Contractor, and not the Architect, Inspector, or District. By entering into this Contract, Contractor agrees that quality control is the responsibility of the Contractor. "Punch" list generated by the Architect is under no circumstances to be considered a vehicle to compel subcontractors to complete contract work.

3. Contractor shall prepare a comprehensive and complete list of corrective items for himself and his subcontractors and shall verify that these items have been

corrected prior to notifying the Architect of completion. Copies of the Contractor's list(s) shall be made available to the Architect and Inspector upon request.

4. Contractor shall notify the Architect *in writing* when Contractor, with concurrence of Inspector, feels the project is one-hundred percent complete and is ready to leave the Project. Architect shall then commence the construction review and prepare a "Punch List", or list of minor corrective items to be issued to Contractor. For convenience, reviews may be phased for various portions of the work, as each distinct portion becomes one hundred percent (100%) complete.

5. Architect will arrange for Engineering Consultants to make their construction reviews, to be completed before Architect will make his construction review. Contractor and his principal superintendent, authorized to act in behalf of the Contractor, as well as principal subcontractors that the Architect may request to be present, shall accompany the Architect/Engineers during the construction reviews.

6. Excessive amounts of corrective ("punch list") items, as judged by the Architect, shall be grounds to terminate the construction review until such time as the Contractor is deemed sufficiently complete to once again start the review. As a rule of thumb, more than four minor items per typical room will be considered excessive.

7. If Owner elects to occupy the Project after the Contract Completion Date, but before the Contractor has completed the Work, Architect must make a comprehensive construction review prior to Owner's occupancy. Contractor shall reimburse Architect and Engineers for their time in conducting such review, and for the time of their clerical staffs in preparing the review documents, at the Architect's/Engineer's standard hourly rates for extra services. Contractor will be billed at the time of Contractor's Application for Payment. Payments to the Architect not received within 30 days will be deducted from subsequent Contractor's Applications for Payment in accordance with the General Conditions.

8. After completion of "Punch List" work, Contractor shall notify Architect in writing to perform an acceptance tour. Notice shall be issued at least seven (7) days in advance of the time the acceptance tour is to be performed.

9. Contractor and his principal superintendent, authorized to act in behalf of Contractor, as well as principal subcontractors that Architect may request to be present, shall accompany Architect and Inspector on acceptance tour.

    a. If work has been completed in accordance with Contract Documents, and no further corrective measures are required, Architect will issue a Certificate of Substantial Completion, and recommend that Owner accept Project and file Notice of Completion.

    b. If work is judged to be substantially completed in accordance with Contract Documents, and only a few corrective measures are required, Architect will issue a Certificate of Substantial Completion, (Article 64 of the General Conditions), and recommend that Owner conditionally accept Project and file Notice of Completion. Owner may conditionally accept project and withhold amount for completion per Article 64 of the General Conditions, Contractor shall issue a written notice of intent to complete the corrective measures by a specific named date agreed to by District.

    c. If work has not been substantially completed in accordance with Contract Documents, and several or many corrective measures are still required, Architect will recommend that Owner not accept project and not file

Notice of Completion. Instead, based on information gathered from acceptance tour, Contractor will be required to complete corrective measures and then call for another project acceptance tour following procedure outlined above. Contractor will compensate Architect and Inspector for additional acceptance tour and deduct amount paid from final payment to Contractor.

10. After Substantial Completion, Contractor shall issue an Application for Payment in accordance with Specification Section 01 29 00, Part 1.03, H. All administrative actions and submittals, including conditions, outlined therein outlined must be complete prior to Owner's release of payment, **and MUST BE COMPLETED PRIOR TO AGENDIZING FOR PROJECT ACCEPTANCE BY THE OWNER'S GOVERNING BOARD.**

Commented [BM1]: Make sure this section is included in your spec book or remove item/reference

11. Upon Contractor completing all administrative actions and submittals, and meeting all conditions, Owner will agendize acceptance of the Work for the next official meeting of the Governing Board. Official action by the Governing Board shall constitute Project Acceptance. Upon acceptance, Contractor shall immediately remove trailers and other remaining temporary facilities.

12. District shall file Notice of Completion with the County Recorder as soon as practicable following Project Acceptance. The date of record for the Notice of Completion shall be the date stamped on the Notice by the Recorder at the time the County Recorder registers the Notice.

13. **The date stamped on the Notice of Completion by the County Recorder shall be the date for commencement of all warranties and guarantees, and the date the Owner becomes responsible for security, maintenance, heating and cooling, utilities, damage to the work (unless done by Contractor's forces working on corrective items), and insurance.**

Contractor shall remain responsible for these items prior to this date.

The Owner will inform the Contractor by letter immediately after receiving confirmation in writing from the Recorder's office of registration of the Notice of Completion. Contractor is hereby notified that the process of registering, stamping, and receipt of confirmation from the County has been known to take as much as four weeks from the time of filing.

14. Upon acceptance of Project by Owner, Contractor shall submit his request for final payment in accordance with Specification Section 01 29 00 – Payment Procedures, Part 1.03, I. Payment of retention will not be made by Owner until 35 days after Notice of Completion has been registered by the County Recorder.

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In addition, retention payment will not be made until Contractor has filed the required Form DSA 6 with Division of the State Architect, with copy to the Architect.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 SUMMARY:

A. Related Documents: Drawings and general provisions of the Contract, including General and Supplemental Conditions and Division 1 Specifications Sections, apply to this section, and including all Technical Specifications Sections, and the Operating and Maintenance Requirements of Division 21 through Division 28.

B. Section Includes:

1. Compilation of product data and related information appropriate for Owner's maintenance and operation of products and equipment furnished under the Contract per CBC Section 110.3.10.2.

2. Instruction of Owner's personnel in the maintenance of products and in the operation of equipment and systems.

1.02 SUBMITTAL PROCEDURES

A. Preliminary: Submit one copy of proposed manuals to Architect at least fifteen (15) days prior to final inspection or acceptance.

B. Final: Following the indoctrination and instruction of the Owner's operating and maintenance personnel, review proposed revisions to the manual with the Architect.

1. Submit three copies of accepted data in final form ten (10) days after final inspection. Approval of submittal is a pre-requisite at Substantial Completion prior to Owner's agendizing project for acceptance by the Governing Board.

PART 2 - PRODUCTS

2.01 FORMAT

A. Size: Minimum 4 inch, three-ring binders for 8-1/2" x 11" punched pages, completely clear plastic covered for insertion of labels on spines and covers.

B. Provide identifying tabbed pages. Classify by Division and by Section. All tabbing shall be in numerical order.

C. Drawings:

1. Provide reinforced punched binder tab. Bind drawings with text.
2. Fan fold larger drawings to size of text pages, for easy foldout.

D. Cover: Identify each volume with typed or printed label, List:

1. Title of Project
2. Identity of separate structures as applicable.
3. Identity of general subject matter covered in the manual.

E. Spine: Identify each volume with typed or printed label stating OPERATING AND MAINTENANCE INSTRUCTIONS, GUARANTEES AND SERVICE CONTRACTS and the following information:

1. Title of Project.
2. Divisions and Sections included within volume.

3. Volume number (i.e. "1 of 4")

PART 3 - EXECUTION

3.01 CONTENT OF MANUAL

A. Table of Contents:

1. List of each product indexed to the content of the volume.

2. List with each product the name, address, and the telephone number of:

a. Subcontractor and installer.
b. Maintenance contractor, as appropriate.
c. Local sources of supply for parts and replacement.

B. Product Data: Annotate each sheet to clearly identify the data applicable to the installation. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with Drawings as necessary to illustrate the following:

a. Relationship of component parts of equipment and systems.
b. Control and flow diagrams.

2. Do not include Project Record Drawings as maintenance drawings.

D. Instructions: Provide written text, as required to supplement product data for the particular installation.

E. Warranties, Guaranties, Bonds, and Service Contracts: Include a copy of each warranty, guaranty, bond, and service contract issued.

1. Provide information sheet for Owner's personnel describing the following:

a. Proper procedures in the event of failure or emergencies.

b. Circumstances under which the validity of warranties, guaranties, or bonds might be compromised.

3.02 MANUAL FOR MATERIALS AND FINISHES

A. Instructions for Care and Maintenance: Include Manufacturer's data as follows:

1. Recommendations for types of cleaning agents and methods.

2. Cautions against cleaning agents and methods which are detrimental to the product.

3. Recommended schedule for cleaning and maintenance.

B. Energy Conservation Features:

1. Provide a list of energy conservation features, materials, components, and mechanical devices installed in the building.

3.03 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of mechanical equipment and system, as appropriate:

1. Description of unit and component parts:

a. Function, normal operating characteristics, and limiting conditions.
b. Performance curves, engineering data, and tests.
c. Complete nomenclature and commercial number of replaceable parts.

2. Operating Procedures:

a. Start-up, break-in, routine, and normal operating instructions.
b. Regulation, control, stopping, shut-down, and emergency instructions.
c. Summer and winter operating instructions.

3. Maintenance Procedures:

a. Routine operations.
b. Guide to "trouble-shooting".
c. Disassembly, repair, and reassembly.
d. Alignment, adjusting, and checking.

4. Servicing and lubrication schedule including list of lubricants required.

5. Manufacturers' printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacture's parts list, illustrations, assembly drawings, and diagrams required for maintenance, including:

a. Predicted life of parts subject to wear.
b. Items recommended to be stocked as spare parts.

8. Control diagrams by manufacturer of controls as installed in project.

9. Coordination drawings and color-coded piping diagrams.

10. Charts of valve tag numbers, with the location and function of each valve.

B. Content, for each electric and electronic system as appropriate.

1. Description of system and component parts:

a. Function, normal operating characteristics, and limiting conditions.
b. Performance curves, engineering data, and tests.
c. Complete nomenclature and commercial number of replaceable parts.

2. Circuit directories of panelboards:

a. Electrical service.
b. Controls.
c. Communications.

3. As-installed color-coded wiring diagrams.

4. Operating procedures:

a. Routine and normal operating instructions.
b. Sequences required.
c. Special operating instructions.

5. Maintenance procedures:

a. Routine operations.
b. Guide to "trouble-shooting."
c. Disassembly, repair and reassembly.

d. Adjustment and checking.

6. Manufacturer's printed operating and maintenance instructions.

7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

3.04 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment, and systems installed in project.

1. Provide services of factory trained instructors from the manufacturer of each major item of equipment or system.

2. Provide for each instruction session or "in-service", a DVD Camcorder operator and **DVD Camcorder** to record the session. DVD recordings shall be clearly labeled as to project, subject, and date. Submit DVDs in triplicate.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.

2. Review instructions on how to efficiently use state required energy conservation features, materials, components, and mechanical devices.

END OF SECTION

SECTION 01 78 30

WARRANTIES, GUARANTEES, AND BONDS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: General requirements for written warranties, guaranties, and bonds required by the Contract Documents.

B. Referenced Sections:

1. Section 01 77 00 – Closeout Procedures: Submittal of Final Verified Reports and Notice of Completion, as a condition of project acceptance and payment.

2. Section 01 78 39 – Project Record Documents as a condition of project acceptance and payment.

3. Section 01 78 23 – Operation and Maintenance Data: Incorporation of warranties, guaranties, and bonds into instruction manuals.

C. **Approval of the warranties, guaranties, and bonds by the Owner is a prerequisite to payment at Substantial Completion and agendizing for acceptance by the Governing Board of the Owner.**

1.02 TIME PERIOD

A. Deliver manufacturers' warranties, guaranties, and bonds required by Contract Documents, with Owner named as beneficiary. Where manufacturers' warranty or guaranty extends for a longer time period than the Contractor's warranty and guaranty, deliver manufacturer's warranties or guaranties in same manner.

1.03 WARRANTY/GUARANTY FORM

A. Submit written warranties and guaranties, except manufacturer's standard printed warranties and guaranties, on the Contractor's, subcontractors', material suppliers', or manufacturers' own letterhead, addressed to Owner, in the form attached to this Section.

B. Submit warranties and guaranties in duplicate, and in the form indicated, signed by cognizant entities, and by Contractor in every case, with modifications as approved by Owner to suit the conditions pertaining to the warranty or guaranty.

1.04 SUBMITTALS

A. Collect and assemble written warranties and guaranties into bound booklet form, and deliver bound books to Architect for delivery to Owner for final review and approval.

1. See Sections 01 77 00 and 01 78 23 for additional submittal requirements.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

ATTACHMENT: Warranty/Guaranty Form

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WARRANTY/GUARANTY FORM

FOR _____ WORK

We, the undersigned, do hereby warranty and guaranty that the parts of the work described above which we have furnished or installed for:

(PROJECT NAME)

are in accordance with the Contract Documents and that all said work as installed will fulfill or exceed all the Warranty and Guaranty requirements. We agree to repair or replace work installed by us, together with any other work which is displaced or damaged by so doing, that proves to be defective in workmanship, material, or operation within a period of _____ ( ) year(s) from the date Notice of Completion is registered with the San Diego County Recorder, ordinary wear and tear and unusual neglect or abuse excepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable time period determined by the Owner, after notification in writing, we, the undersigned, all collectively and separately, hereby authorize the Owner to have said defective work repaired and/or replaced and made good, and agree to pay to the Owner upon demand all moneys that the Owner may expend in making good said defective work, including all collection cost and reasonable attorney fees.

Date: _____ _____

(Subcontractor, Sub-subcontractor, Manufacturer or Supplier)

By:_____

Title: _____

State License No: _____

Local Representative: For maintenance, repair, or replacement service, contact:

Name: _____

Address: _____

Phone Number _____

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SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Requirements for Record Documents.

B. Throughout progress of the work of the contract, maintain an accurate record of changes in the Contract Documents, as described below.

C. Upon completion of the work of this Contract, transfer the recorded changes to a set of Record Documents, as described herewith.

1.02 QUALITY ASSURANCE

A. General: Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as accepted in advance by the Architect.

B. Accuracy of Records: Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of drawings and other documents where such entry is required to properly show the change. Accuracy of records shall be such that future searches for items shown in the Contract Documents may reasonably rely on information obtained from the accepted Record Documents.

C. Timing of Entries: Make entries within 24 hours after receipt of information.

1.03 PAYMENT WITHHELD

A. The Architect reserves the right to withhold certification of payment requests for failure on the part of the Contractor to maintain Record Drawings in conformance with this Section.

1.04 SUBMITTALS

A. General: The Architect's review of the current status of Record Documents will be a prerequisite to the Architect's review of requests for progress payment and request for final payment under the contract.

B. Progress Submittals: Prior to submitting each request for progress payment, secure the Architect’s review of the Record Documents as currently maintained.

C. Final Submittal: Prior to submitting request for final payment, submit the final Record Documents to the Architect and secure his acceptance.

1.05 PRODUCT HANDLING

A. Maintain the job set of Record Documents protected from deterioration and from loss and damage until completion of the work and transfer of the recorded data to the final Record Documents.

B. In the event of loss of recorded data, use means necessary to again secure the data to the Architect's acceptance; such means shall include, if necessary in the opinion of the Architect, removal and replacement of concealing materials and, in such case, replacements shall be to the standards originally specified in the Contract Documents.

PART 2 - PRODUCTS

2.01 RECORD DOCUMENTS

A. Job Set: Secure from the Owner, at no charge to the Contractor, one complete set of Documents comprising the Contract.

B. Contractor shall provide the architect a pdf copy of all as-builts after the project is completed. As-builts shall include all posted CCDs and RFIs and any other documents issued during construction. As-builts shall be maintained during construction on a daily basis. Any adjustments in location of any item on the plans shall be accurately recorded on the as-built plans.

C. Before commencing backfilling of utilities or any other underground pipes, ducts, conduits, or structures, take photographs showing relationship of below ground utilities to structure(s) or other physical reference point. Provide three-ring binder containing 3-1/2" x 5" mounted and numbered prints of photos, plus the negatives, categorized by locations and indicating utilities shown. Provide a photo(s) of all connections, crossings, stubs, or other critical points. If the Contractor neglects to take such photographs, Contractor shall uncover, at the Contractor's expense, the area(s) so neglected in order to provide the requisite photos.

Provide a hard copy and pdf copy composite Utility Site Plan with the number of each photograph placed on the plan at the location the photo was taken from, and a mark indicating which way the camera was pointed. All numbers and marks shall be in ink, and shall be clear, legible, and neatly done. Photo binder and photo plan shall be considered part of the Record Documents.

D. Survey file, in both PDF format and CAD format with all improvements indicated and certified that all items are constructed to line and grade in accordance with the approved plans.

PART 3 – EXECUTION

3.01 MAINTENANCE OF JOB SET

A. Identification: Upon receipt of the job set, identify each of the documents with a title "RECORD DOCUMENTS-JOB SET".

B. Preservation:

1. Considering the contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set for the review of the Architect.

2. Use the job set for no purpose other than entry of new data and for review by the Architect, until start of transfer of data to final Record Documents.

3. Maintain the job set at the site of work as that site is designated by the Architect.

C. Making Entries on Drawings: Using an erasable colored pencil (not ink nor indelible pencil), clearly describe the change by note and by graphic line, as required. Date entries. Call attention to the entry by a "cloud" around the area or areas affected. In the event of overlapping changes, different colors may be used for each of the changes. In the event of superseding changes to any area of the drawing, erase only that portion of the preceding change that is affected by the subsequent change before entering the subsequent change.

D. Making Entries on Other Documents:

1. Where changes are caused by directives issued by the Architect, clearly indicate the change by note in ink, colored pencil, or rubber stamp, and reference Division of the State Architect approved addenda and change orders.

2. Where changes are caused by Contractor originated proposals reviewed by the Architect, including inadvertent errors by the Contractor which have been accepted by the Architect, clearly indicate the change by note in erasable colored pencil.

3. Make entries in the pertinent documents as reviewed by the Architect.

4. Reference specifications section 01 77 00, Closeout Procedures, 1.02 (Closeout Schedule and Procedure) paragraph 4. Project Acceptance Requirements, Division of the State Architect for list of documents required at closeout.

E. Conversion of Schematic Layouts:

1. In most cases on the Drawings, arrangement of conduits and circuits, piping, ducts, and other similar items, is shown schematically and is not intended to portray precise physical layout. Final physical arrangement shall be as determined by the Contractor, subject to the Architect's review. However, design of future modifications of the facility may require accurate information as to the final physical arrangement of items and location of utilities which are shown only schematically on the Drawings.

2. Show on the job set of record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items such as are described in the preceding paragraph above. Clearly identify the item by accurate note such as "cast-iron drain", "galvanized water pipe", etc. Show, by symbol or note, the vertical location of the item ("under slab", "in ceiling plenum", "exposed", etc.). Make identification sufficiently descriptive that it may be related reliably to the Specifications.

3. The Architect may waive the requirements for conversion of schematic layouts where, in the Architect's judgment, such conversion serves no beneficial purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect.

4. Timing of Entries: Be alert to changes in the work from how it is shown in the Contract Documents: Promptly, and in no case later than 24 hours after the change has occurred and been made known to the Contractor, make the entry or entries required.

F. Accuracy of Entries: Use means necessary, including proper instruments or tools for measurement, to determine actual locations of the installed items.

3.02 FINAL RECORD DOCUMENTS

A. General: The purpose of the final Record Documents is to provide factual information regarding the work, both concealed and visible, which will enable future modification of design to proceed without lengthy and expensive site measurement, investigation, and examination.

B. Review of Recorded Data Prior to Transfer: Following receipt of the pdf (Blue Beam Review compatible) as-builts described here-in-above, and prior to start of transfer of recorded data thereto, secure a review by the Architect of recorded data. Make required revisions.

C. Transfer of Data to Drawings: Carefully transfer change data shown on the job set of Record Drawings to corresponding sepias, coordinating the changes as required, and clearly indicating at each affected detail and other drawing the full description of changes made during construction and the actual location of items described above. Call attention to each entry by drawing a cloud around the area or areas affected. Make change entries on the as-builts neatly, consistently, and in ink or crisp black pencil.

D. Transfer of Data to Other Documents: If the documents other than drawings have been kept clean successfully during progress of the work, and if entries have been sufficiently orderly thereon and reviewed by the Architect, the job set of those documents (other than drawings) will be accepted by the Architect as the final portion of the record documents. If any such document is not so accepted by the Architect, secure a new copy of that document from the Architect at the Architect's usual charge for reproduction carefully transfer the change data to the new copy and obtain the acceptance of the Architect.

E. Review and Approval: Submit the completed total set of Record Documents in both hard copy and in pdf format to the Architect as described above. Participate in review meeting or meetings as required by the Architect, make required changes in the Record Documents, and promptly deliver the final Record Documents to the Architect.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

A. The Contractor shall have no responsibility for recording changes in the work subsequent to acceptance of the work by the Owner, except for changes resulting from replacements, repairs, and alterations made by the Contractor as a part of his guarantee. No changes will be allowed without approval of the Division of the State Architect.

END OF SECTION

02 00 00

SITE WORK

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Project site and building demolition work to prepare for addition of new improvements, as indicated on the Drawings and specified herein. General and Special Conditions and Division 1 specification sections apply to this section.

B. Related Sections:

1. Section 01 73 29, Cutting and Patching
2. Section 01 77 00, Closeout Procedures

1.02 DEFINITIONS

A. “Remove”: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner’s property.

B. “Removed and Salvaged”: Items to remain the Owner’s property shall be removed, cleaned, and packed or crated to protect against damage.

1. Identify contents of containers and deliver to Owner’s designated storage area.

C. “Existing to Remain” Protect construction indicated to remain against damage and soiling during demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.

D. “Remove and Reinstall”: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in locations indicated.

E. Salvaged Materials (not wanted by Owner): Items which the Owner does not want and is of salvable value to Contractor may be removed from structure as work progresses. Owner and CBC require a minimum of 50% (by weight) of all non-hazardous construction materials be recycled, composted and/or salvaged. Salvage shall conform to the following:

1. Contractor shall submit salvage plan showing how all materials are to be sorted, salvaged and recycled. Plan must include all final destinations for each type of material.

2. Salvaged items must be transported from site as they are removed, unless materials are to be reused on site.

3. Storage or sale of removed items on site will not be permitted, unless materials are to be reused on site.

4. Contractor shall provide certification for all salvaged materials. Certifications may take the form of receipts from recycling facilities, manufacturers, or any other legitimate form of certification. Certification types shall be outlined in salvage plan and approved by Owner.

1.03 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged or otherwise indicated to

remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition by the Contractor(s) in a legal disposal area appropriate to the materials being disposed.

1.04 SUBMITTALS

A. Submit each item in this Article according to the Conditions of the Contract and Specifications Section 01 33 00, unless otherwise indicated.

B. Proposed Dust Control Measures.

C. Proposed Noise Control Measures.

D. Schedule of demolition activities indicating the following:

1. Detailed sequence of demolition, salvage, and removal work, with starting and ending dates for each activity.

2. Dates for shutoff, capping, and continuation of utility services.

E. Salvage Plan - Inventory of items to be removed and salvaged. Salvage plan shall show how all materials are to be sorted, salvaged and recycled. Plan must include all final destinations for each type of material.

F. Inventory of items to be removed and salvaged and deliver to Owner's designated storage area.

G. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and improvements that might be misconstrued as damage caused by demolition operations.

H. Record drawings at project closeout according to Specification Section 01 77 00 - Closeout Procedures shall identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed demolition work similar to that indicated for this Project.

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

C. Pre-demolition Conference: Conduct conference at Project site with Owner, Architect and Construction Manager.

1.06 PROJECT CONDITIONS

A. Building, where partial wall will be demolished, will be vacated and its use discontinued before start of the Work.

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

C. Hazardous Materials: If applicable, a Hazardous Materials Study was performed on site and a specification for removal of said materials is incorporated into the project documents.

1.07 SCHEDULING

A. Arrange demolition and salvage schedule so as not to interfere with Owner's on-site operations.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicted to determine extent of demolition required.

C. Inventory and record the conditions of items to be removed and reinstalled and items to be removed and salvaged.

D. Survey condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.

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

3.02 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

B. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner, and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to governing authorities.

C. Provide not less than 72 hours notice to Owner if shutdown of service is required during changeover.

D. Utility Requirements: Refer to Division 21 through Division 26 sections for shutting-off, disconnecting, removing, and sealing or capping utility services. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.03 PREPARATION

A. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways.

2. Protect existing site improvements, appurtenances, and landscaping to remain.

C. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to remain.

1. Strengthen or add new supports when required during progress of demolition.

3.04 EXPLOSIVES

A. The use of explosives will not be permitted.

3.05 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not create hazardous or objectionable conditions, such as flooding, and pollution, when using water.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.

C. Clean adjacent buildings and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

3.06 DEMOLITION

A. Demolish partial building wall, concrete and/or asphalt paving, interior finishes, fixtures and accessories, as required to prepare for new construction, and remove from the site.

B. Locate demolition equipment throughout the building and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

C. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.

D. Promptly repair damages to adjacent facilities caused by demolition operations.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

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

B. Burning demolished materials is not allowed.

C. Transport demolished materials off Owner’s property and legally dispose of these materials.

END OF SECTION

03 00 00

CONCRETE

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 03 10 00
CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Openings for other work.

C. Form accessories.

D. Form stripping.

1.02 REFERENCE STANDARDS

A. ACI 301 - Specifications for Concrete Construction 2020.

B. ACI 347R - Guide to Formwork for Concrete 2014 (Reapproved 2021).

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.

C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

2.02 WOOD FORM MATERIALS

A. Plywood: Douglas Fir species; solid one side grade; sound undamaged sheets with clean, true edges.

2.03 FORMWORK ACCESSORIES

A. Form Ties: Removable type, galvanized metal, fixed length, cone type, with waterproofing washer, free of defects that could leave holes larger than 1 inch (25 mm) in concrete surface.

B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.

PART 3 EXECUTION

3.01 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

3.02 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

3.03 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in passing through concrete work.

B. Locate and set in place items that will be cast directly into concrete.

3.04 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Completion of reinforcing steel bars, welded wire fabric, support chairs, bolsters, bar supports, and spacers as indicated on the drawings and specified herein.

B. Related Sections:

1. Concrete Forming and Accessories; refer to Section 03 10 00.
2. Cast-in-Place Concrete; refer to Section 03 30 00.

1.02 QUALITY ASSURANCE

A. Conform to the testing and inspection requirements of Section 01 45 23 – Testing and Inspection Services.

B. Perform reinforcing work in strict conformance with Chapter 19A, Title 24, California Building Code (CBC) and CRSI, unless specified otherwise or required otherwise by local code jurisdiction.

1.03 REFERENCES STANDARDS

A. Refer to Section 01 42 19 – Reference Standards for information concerning availability and use of references.

ACI SP-66(04) - Detailing Manual

ACI 318-14 - Building Code Requirements for Structural Concrete

ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement

ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete

ASTM A497 - Steel Welded Wire Reinforcement, Deformed, for Concrete

ASTM A615 - Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM A706 - Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement

CRSI MSP - Manual of Standard Practice

AWS A5.1 - Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding

AWS A5.5 - Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding

AWS D1.4 - Structural Welding Code---Reinforcing Steel

B. In addition to CRSI specifications, follow ACI 315 and 318, AWS welding codes and qualifications, and ASTM A185, A615 and A706.

C. Testing of bars in accordance with Title 24, Section 1903A and 1903A.8, Part 2.

1.04 TESTING

A. Comply with Title 24, Section 1913A

B. Where samples are taken from bundles as delivered from the mill, with the bundles identified as to heat number, and provided that the mill analysis accompany the report, then one tensile test and one bend test shall be made from a specimen from each 10

tons or fraction, of each size of reinforcing steel

C. Where positive identification of the heat number cannot be made or where random samples are to be taken, then one series of tests shall be made from each 2-1/2 tons or fraction, of each size of reinforcing steel.

D. Testing Laboratory shall perform chemical analysis of reinforcing for suitability for welding prior to welding. Welding reinforcing bars shall comply with ASTM A706.

1.05 SUBMITTALS

A. The Contractor shall be responsible for providing steel reinforcing as indicated on the Drawings for concrete reinforcing and as specified herein. Prepared Shop Drawings shall be reviewed by the Architect or Structural Engineer.

1.06 DELIVERY, STORAGE AND HANDLING

A. Do not allow reinforcing materials to have direct contact with the ground. Cover materials adequately to prevent rusting and contact with materials or construction injurious to proper bonding.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Reinforcing Bars: Deformed billet steel reinforcing bars, ASTM A615, plain finish (except ASTM A706 for welded bars where called for), see Drawings for grade.

1. When welding is required, provide reinforcing bars conforming to ASTM A706, including the additional requirements of AWS D1.4, as modified by CBC Standard Chapter 19A.

2. Where called for, provide ASTM A706.

2.02 ACCESSORIES

A. Welded Wire Fabric: Provide plain type, ASTM A185, in coiled rolls, plain finished, void of rust, dust, scale, paint, grease and other coatings.

B. Provide minimum 16 gauge galvanized annealed tie wires, and chairs, bolsters, bar supports, and spacers sized and shaped for strength and support of reinforcing. Plastic accessories may be acceptable if approved by Architect prior to use.

2.03 FABRICATION

A. Fabricate in accordance with details shown.

B. Accurately bend, cut and place bars as shown on Drawings and in accordance with the requirements of Title 24, Part 2, Section 1905A and ACI 318. Bend bars cold; heating of bars is not permissible. Do not bend or straighten bars in any manner that will injure materials.

C. Welding: Reinforcing to be welded shall comply with the requirements of Title 24, Part 2, Section 1903A.8 and ACI 318. Perform welding, where shown or approved, by the direct electric arc process in accordance with AWS D1.4 using E90 series low hydrogen electrodes., except E80 for ASTM A706, GRW reinforcing. Preheat 6 inches each side of joint. Protect joints from drafts during cooling process; accelerated cooling is prohibited. Do not tack weld bars. Clean metal surfaces to be welded of all loose scale and foreign materials. Clean welds each time electrode is changed and chip burned edges before placing welds. When wire brushed, completed welds must exhibit uniform section, smooth welded metal, feather edges without undercuts or overlays, freedom from

porosity and clinkers, and good fusion and penetration into the base metal. Cut out welds or parts of welds found defective, with chisel, and replace with proper welding.

1. Employ only experienced certified welding operators.

2. Prequalification of welds are to be in accordance with code and carbon equivalent of reinforcing not exceeding 0.75.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to commencing work of this section, inspect work of others and verify that such work has been properly completed and installed to allow for proper installation of all materials and methods required of this section.

3.02 INSTALLATION

A. Fabricate reinforcing in accordance with ACI 315. Locate reinforcing splices not shown on drawings, at points of least stress. Where shown or required, weld reinforcing bars in accordance with AWS D1.4.

B. Place reinforcing supported and secured against displacement. Do not deviate from true alignment.

C. Ensure that reinforcing used is clean, free of scale, dirt, dust, rust and other matter.

D. Provide lap splices for bars noted as "cont.". Provide a Class “B” lap splice in concrete and 72 bar diameters in masonry. Wire all laps and splices in welded wire mesh and provide side and end laps of at least 6 inches.

1. Spacing - minimum center-to-center distance between parallel reinforcing bars is to be in compliance with that shown on drawings, or in the absence of such information on drawings, the clear spacing is to be one bar diameter, but in no case less than 1-1/2 inch, nor less than 1-1/3 times the maximum size of aggregate.

2. Where possible, stagger splices of adjacent vertical bars.

E. Only splice reinforcing where shown or noted. Splices at other locations must be approved by the Architect. Provide continuous reinforcement between splice locations in vertical walls. No splices of vertical wall reinforcing may occur except at foundations, unless specifically approved by Division of the State Architect, and the Architect.

1. Securely tie reinforcing with 16 gage tie wire at all splices and intersections, and as may be directed.

2. Point ends of wire ties away from forms.

F. Stagger splices in adjacent horizontal wall reinforcing bars a minimum of 4 feet.

G. Provide dowels in footings and/or grade beams the same size and number as vertical wall or column reinforcing. Provide a minimum dowel projection equal to Class “B” lap splices unless noted otherwise.

1. Securely tie dowels in place before depositing concrete. Install No. 3 bars for securing dowels where no other reinforcement is provided.

H. Provide the minimum coverage of reinforcing by concrete:

MINIMUM COVER:

Inches (mm)

1. Cast against and permanently exposed to earth…… 3 (76)

2. Concrete exposed to earth or weather:

   No. 6 through No. 18 bar…… 2 (51)

   No. 5 bar, W31 or D31 wire, and smaller……1-1/2 (38)

3. Concrete not exposed to weather or in contact with ground: Slab, walls, Joists:

   No. 14 and No. 18 bar…… 1-1/2 (38)

   No. 11 bar and smaller…….. 3/4 (19)

4. Beams & Columns:

   Primary reinforcement, ties, stirrups, spirals……. 1-1/2 (38)

I. Reinforcing bars shall not be re-bent.

3.03 APPLICATION

A. Correction during concreting: Maintain capable steel workers during placement of concrete for properly resetting reinforcement displaced by runways, workers, or other causes.

B. Reinforcement: As a minimum for slab reinforcement, provide 6 x 6 W4.0 x W4.0 wire mesh ASTM A185, if no other reinforcement is indicated.

3.04 DEFECTIVE WORK

A. The following reinforcing work will be considered defective and may be ordered by Owner to be removed and replaced at no additional expense to Owner:

1. Bars with kinks or bends not shown on Drawings.
2. Bars injured due to bending or straightening.
3. Bars heated for bending.
4. Reinforcement not placed in accordance with Drawings or Specifications.
5. Rusty or oily reinforcement.

3.05 FIELD QUALITY CONTROL

A. Refer to Section 01 45 23 - Testing and Inspection Services for requirements.

B. Prior to pouring concrete, notify all parties to the inspections, that reinforcing is ready for inspections. Secure approvals by testing laboratory and inspector before concrete operations commence.

3.06 CURING

A. Concrete (other than high-early-strength) shall be maintained above 50 degrees F. and in a moist condition for at least the first seven (7) days after placement, except when cured in accordance with Section 1905A, CBC.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Completion of sand bed, vapor barrier, cast-in-place concrete, and finishes as indicated on the drawings and specified herein.

B. Related Sections:

1. Concrete Forming and Accessories; refer to Section 03 10 00.

2. Formwork, Earthen forms: See Section 03 10 00 Concrete Forming and Accessories.

3. Concrete Reinforcing: See Section 03 20 00.

1.02 QUALITY ASSURANCE/SUBMITTALS

A. Conform with the requirements of Section 01 45 23 - Testing and Inspection Services.

B. Perform concrete work in accordance with ACI 301 and 318, unless specified otherwise. Provide continuous inspection and testing for concrete placement in accordance with Sections 1701A and 1913A Title 24, Part 2, California Building Code.

C. Sample Panels: When and where instructed to do so, provide on-site sample panel with specified finishes. Construct additional panels as may be necessary to gain approval of finishes desired. After rejection of panel, remove from site immediately. Approved and reviewed panel is to be left in place at site for project duration as a project standard.

D. Testing Laboratory Services:

1. Owner will employ and pay for an Independent Testing Laboratory to review the various concrete mixes required to produce concrete of the strengths required for the project. Submit and obtain approvals before proceeding with the work. Concrete mix shall be designed per Title 24, Part 2, Section 1904A.2

2. Separately, Owner will employ and pay for a testing laboratory to perform tests and inspections, but the cost of subsequent and additional testing and inspections due to failed items will be back charged to the Contractor.

E. Submit design mixes to Architect for Structural Engineer, and Testing Lab review and approval. Contractor shall pay for review of more than two (2) designs for each strength required.

F. Submit shrinkage test for each design minimum. Perform the following shrinkage tests for lightweight concrete, for each 150 cubic yards and fraction:

1. Specimens - 4-inch x 4-inch and 11-inch-long bars, cured for seven (7) days in a moist room and as specified in ASTM C157. Make measurements at 7-day intervals until 35 days of curing has elapsed.

2. Allowable shrinkage of lightweight concrete used on project is not to exceed 0.05 percent after the 35 days of curing has elapsed.

1.03 REFERENCE STANDARDS

A. Refer to Section 01 42 19 – Reference Standards for information concerning availability and use of references.

ACI 318 - Building Code Requirements for Structural Concrete and Commentary

ASTM C33 - Standard Specification for Concrete Aggregates

ASTM C94 - Standard Specification for Ready-Mixed Concrete

ASTM C114 - Standard Test Methods for Chemical Analysis of Hydraulic Cement

ASTM C156 - Standard Test Method for Water Loss [from a Mortar Specimen] through Liquid Membrane-Forming Curing Compounds for Concrete

ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete

ASTM C227 - Standard Test Method for Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method)

B. All work under this section shall be in accordance with applicable provisions of CBC, Title 24, Part 2, Chapter 19A.

C. Refer to the following information for compliance of materials, products, and installation techniques: ASTM C33, C94, C150, C260, C494 and ACI 301, 304R-00 and 305R-99.

D. Handling and Placing: Concrete transported and placed as per ACI 318. Concrete shall be thoroughly compacted and worked into forms around reinforcing steel using suitable equipment. Vibrating of formwork will not be permitted.

E. Where conditions make placing difficult or reinforcing is congested, batches containing the same proportions of sand and cement used in the concrete plus a maximum of 50 percent of coarse aggregate shall be used.

F. Inspections: Notify the Architect, Structural Engineer, and the Division of the State Architect (DSA) at least forty-eight hours in advance of the first pour of concrete and sufficiently in advance of subsequent pours, see 1704A, Title 24, Part 2, California Building Code and Chapter 7, Section 7-145, Title 24, Part 1, California Administrative Code.

G. Testing: The Inspector will take at least four cylinders of concrete from each day's run of 50 yards, or 2,000 sq. ft. of surface area for slabs, or fractional part thereof, per ACI 318. Field specimens of concrete taken and tested in accordance with CBC Standard. Label each cylinder with job name, date, number, result of slump test, and the point in the pour in the structure from which the sample was taken noted thereon. One cylinder shall be tested at seven days and two at 28 days. The fourth cylinder shall be stored for 56 days unless instructed otherwise. Core test to comply with ACI 318 if cylinder tests indicate deficiencies.

H. Embedded Items: Pipes and conduit in concrete, located, sized and if required, sleeved in accordance with the requirements of ACI 318. Bolts and anchorage devices embedded in concrete to fastened sills, tie-down columns and other structural and framing members to concrete installed and secured in place before concrete is placed.

1. Concrete shall be placed in a continuous operation between predetermined joint locations. Location of construction joints shall be as shown on the drawings or at locations approved by the Engineer and the Division of the State Architect.

2. Joints shall be straight, exactly horizontal or vertical and the surface of the concrete shall be level wherever a run is stopped. Reinforcement shall be

extended through joints or dowels to develop the full strength of the reinforcement. Construction joints shall be per ACI 318.

1.04 TESTING

A. Provide free access to work. Provide laboratory design mix. No substitutions will be accepted. Cement and aggregates shall be tested.

B. Cement: Test Portland cement in accordance with Sections 1913A.1, Title 24, Part 2, and Section 3.2, ACI 318.

C. Core Tests: Take and test composite construction cores in accordance with Section 1913A.4, Title 24, Part 2

D. Batch Plant Inspection: Provide in accordance with Section 1705A.3.2, Title 24, Part 2.

E. Placing Record: Keep records of placing in accordance with Section 1705A.3.6, Title 24, Part 2.

F. Cylinder Test: Provide in accordance with Section 1913A.4, Title 24, Part 2.

G. Slump Test: Provide in accordance with ASTM C143 for each set of test cylinders.

H. Placing Inspection: Provide in accordance with ACI 318.

I. Moisture Testing: All slabs to receive flooring materials other than ceramic tile shall be calcium chloride dome tested at least 54 days after placement. Readings exceeding requirements of flooring manufacturer (generally 3 lbs. per 1,000 s.f. per 24 hours) will require retesting prior to installation of flooring. Readings in excess of 5 lbs. per 1000 s,f, will require testing by Owner using petrographic analysis to determine water/cement ratio at time of placement.

1. All tests in areas where concrete was placed with a water/cement ratio in excess of .45 will be paid for by Owner, but may be back charged to Contractor.

J. Compaction Testing: Provide in accordance with ASTM D689.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cement: For site walls – Colton II - Provide ASTM C150 TYPE II/V conforming to requirements of 1903A.3, Title 24, Part 2. If aggregates contain reactive substances, reactive with cement alkalies they may not be used.

B. Aggregates:

1. Base and Aggregate base shall conform to the State of California, Department of Transportation (CALTRANS) Standard Specifications, Current Edition. All base, whether called out as aggregate base or base shall be in conformance with CALTRANS Section 26 for Class 2 Aggregate Base, 3/4-inch maximum. The maximum percentage of recycled material allowable shall not exceed 50% of the total volume of aggregate used.

2. Base and Aggregate Base shall be provided by a licensed commercial materials supplier. Certifications shall be submitted with each submittal. Use of on-site asphalt materials in aggregate base or base is strictly prohibited. The use of Crushed Miscellaneous Base is strictly prohibited.

3. Aggregates: ASTM C33, 1-inch maximum conforming to CBC, Title 24, Part 2, 1903A.4 Aggregates and ACI 318.

C. Curing Materials:

1. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per square yard, complying with AASHTO M182, Class 2.

2. Moisture-Retaining Cover: One of the following, complying with ASTM C171:

a. Curing paper
b. Polyethylene film
c. Burlap Polyethylene-coated

3. Liquid Membrane-Forming Curing Compound: Liquid type non-wax membrane-forming curing compound complying with ASTM C309, Type I, Class B. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal/ product shall be compatible with finishes to be applied to concrete.

a. Products: Subject to compliance with requirements, provide one of the following:

"2000 Kure 1315"	BASF Building Systems.
"Kurez W Vox"	Euclid Chemical Co.
"Sealtight 1100-Clear"	W.R. Meadows, Inc.

b. Surface Treatment for Slabs Receiving Wood Flooring, Sheet Vinyl, or Resilient Flooring including Sheet vinyl and Vinyl Cementitious Tile, Carpet with a Vinyl, Rubber or Unitary Type Backing: Waterproof, Seal and Cure Application, CS 2000 by Creteseal (800) 278-4273, or equivalent, Floor Seal Technology, Inc. (800) 572-2344.

4. Warranty: 15 years Labor and Materials backed by a $1,000,000 Insurance Policy

a. A trained applicator shall apply CS 2000, or a technician must be on site during the spraying applications for verification to receive the 15 year warranty on floor coverings.

b. When a floor covering system is installed on a slab treated with the product according to manufacturer's instructions, the manufacturer shall warrant the floor covering system against delamination due to negative, ground originated moisture migration or moisture-born contaminates for a period of ten years from the date of original installation.

The warranty shall cover labor and materials necessary to repair or replace the floor covering system if repair cannot be made.

5. After pouring, placing, bullfloating, final finishing, soft cutting, and the surface of the concrete has hardened sufficiently to sustain foot traffic, CS 2000 Sealer shall be applied.

6. Apply CS 2000 Concrete Sealer at the rate of 200 square feet per gallon coverage. If puddling or bird bathing occurs, lightly broom product evenly over the substrate.

7. Continue brooming the product evenly over the substrate until the CS 2000 product has penetrated into the concrete.

8. Provide one of the following, or other approved equal:

Creteseal CS 2000.
Ashford Formula
Kure N Harden – By BASF

D. Water: Provide clean water free from injurious substances, per Section 3.4, ACI 318.

E. Vapor Barrier: Provide Stego Industries, 15-MIL Specifications, comply with ASTM E 1745, Class A, requirements.

F. Admixtures: *(No Calcium Chloride)* Admixtures to be used in concrete shall be subject to prior approval by the IOR and the Division of the State Architect, CBC.

1. Water Reducing: Reduce water 5 percent minimum, increase 28-day compressive strength, decrease 21 day drying shrinkage, ASTM C494.

2. Provide one of the following, or other approved:

BASF The Chemical Co. Pozzolith 300 R.

3. Acceleration or Retarding: ASTM C494.

4. Air Entraining: 4 percent minimum, 6 percent maximum air content by volume, ASTM C260.

5. Admixtures shall be in accordance with Title 24, Part 2, 1903A.6 and Section 3.6 ACI 318.

6. Concrete Sealer: Dayton Superior “Cure & Seal 309 J18”, W.R. Meadows "VOCOMP®-25", or Sonneborn® Products "Kure-N-Seal W" as manufactured by BASF.

a. For site walls use Sinak HLQ 125.
b. 3000 psi concrete 3/8” – 1/2” aggregate.

7. Non-Slip Surface: Trowel finish aluminum oxide grains, at exterior stairs and where indicated on the Drawings.

8. Add shrinkage reducing agent, such as “Eclipse®” as manufactured by Grace Construction Products or Peramin® SRA as manufactured by Peramin.

2.02 COMPONENTS

A. Non-Shrink Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents, capable of developing non-shrink characteristics in both the horizontal and vertical direction with minimum compressive strength of 4,800 p.s.i. in two (2) days, and 6,000 p.s.i. in twenty-eight (28) days.

1. Provide Embeco Grout as manufactured by BASF, or other approved by Five Star, Dayton Superior, or Sika.

B. Cement Grout and Drypack: Precision support grout shall be BASF Masterflow® 713 Grout as manufactured by Master Builders, Cleveland, Ohio consisting of a hydraulic cementitious system, specially graded and processed natural fine aggregate and additional technical components. Other products will only be acceptable providing written approval of the Engineer is obtained prior to bidding. Acceptance will be granted only upon satisfactory evidence proving that the substitute material meets the following requirements, conforming to CRD C-621 Corps of Engineers.

1. Free of gas producing or releasing agents.

2. Free of oxidizing catalysts.

3. Free of inorganic accelerators, including chlorides.

4. Drypack: Pre-mixed grout shall be used. Use only enough water to make a stiff mix consistency. Pre-mixed grout shall be used under base plates per manufacturer's recommendations, and packed solid under pressure treated mudsills, per Structural Details, so as to obtain a continuous bearing. Minimum compressive strength of 6000psi.

C. Joint Materials: Provide tooled joints or plastic control joints.

1. Construction Joints: Provide metal keyed dividers for cold joints, subject to review and approval by Architect.

2. Expansion Joint Fillers:

a. 1/2-inch asphalt impregnated fiber conforming to ASTM D545 Type 5, where slab abutts wall or other vertical elements.

b. Where joint will be finished with sealant, set expansion strip with a 1/2-inch-deep removable expansion strip cap.

D. Under Slab Vapor Barrier: 15 mil Stego Wrap, Fortifiber Building Systems, or W.R. Meadows, or equal, over 2” compacted sand. Refer to plans and Geotechnical Report for installation.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Certifications: Provide legible copies of the delivery tickets of each load of concrete with the following information:

1. Name and location of plant.
2. Serial number of ticket.
3. Date and truck number.
4. Name of contractor.
5. Name of project.
6. Type of class of concrete and how to be used.
7. Amount of concrete.
8. Time loaded, time of arriving and unloading at project site.
9. Water added at site and total water content.
10. Type, name and amount of admixtures.
11. Name and signature of person making slump tests.
12. Testing number of test cylinders.

3.02 PREPARATION FOR PLACEMENT

A. Remove foreign debris and matter which may have accumulated within forms, and close ports and openings left in formwork.

B. Thoroughly clean tools used in transportation, placing and consolidating concrete immediately after each pour.

C. Ensure that required inspections have taken place prior to pour.

3.03 APPLICATION

A. Mixes: The minimum concrete ultimate twenty-eight (28) day compressive strength to be per structural drawings and shall be controlled by the following method:

1. Designed Mix: Concrete mixes shall be based upon previously proven mixes and material tests made by a recognized testing agency. The design of such mixes shall be based on the ultimate strength of the concrete assumed in the design of the structure and shall take into consideration both the workability of the mix and the durability of the concrete. Refer to Sections 1903A.1 and ACI 318.

2. When strengths in excess of 3,000 pounds per square inch are required, or special aggregates not having a record of satisfactory performance are used, or admixtures are used to reduce the cement content, ACI 318, shall be used to determine the mix.

3. Where design criteria in Title 24, Part 2, chapter 19A and ACI 318 Section 5.2, provide for the use of a splitting tensile strength value of concrete as a modifier, laboratory tests shall be made in accordance with the CBC to establish the value of fct corresponding to the specified value of f'c.

4. Tensile-splitting tests of field concrete shall not be used as a basis for acceptance.

5. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement not less than 1 inch and not more than 4 inches.

6. The maximum water to cement ratio shall not exceed 0.5 (50%).

7. Project specific shrinkage test. Perform test using actual proposed mix with some aggregates used in the project. Limit 28-Day shrinkage to 0.045 percent.

B. Control Density Fill: Provide batch plant design mix of 4000 p.s.i., flowable concrete composed of 3000 lbs. aggregate, 45 gals water, 50 lbs. of cement and 400 lbs. of flyash. Adjust proportions for materials as necessary and submit to Architect, for information.

3.04 CONVEYING

A. Handle concrete from mixer to location of placing as rapidly as practical, avoiding separation or loss of ingredients and rehandling. Use carts, wheelbarrows, concrete pumps, conveyors or buggies to deliver concrete to location of placement.

B. Do not permit a free fall of more than 4 feet when placing concrete.

C. Use elephant trunk spouts for placing concrete in vertical elements. Space so that concrete does not exceed 4-foot flow horizontally.

3.05 PLACEMENT

A. In general, place concrete in accordance with ACI 301, and in the presence of the inspecting personnel required.

B. Ensure that anchors, seats, plates, and other items to be cast into concrete are placed, held securely, and will not cause hardship in placing concrete.

C. Maintain records of poured concrete. Record date, location, quantity, air temperatures, and test samples taken.

D. Ensure that reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.

E. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.

F. Pour concrete continuously between predetermined construction, control and expansion joints. Pour in a checkerboard pattern, unless otherwise directed.

G. Excessive honeycomb and embedded debris is not acceptable.

H. Conform to ACI 305R-10 when concreting in hot weather.

I. Install vapor barrier in widest widths possible, under interior slabs on grade. Place at center of 4 inches of sand (minimum of 2 inches of sand top and bottom) lapping joints at least 18 inches and sealing joints, taping pipe penetrations.

J. Screed slabs and concrete bases level to a tolerance of 1/8-inch in 10 feet. Vary slab thickness as required to maintain top of slab elevation as design. Maintain top of slab elevation within ± 3/8" of intended elevation. Continually survey top of concrete elevations during concrete pour.

K. Inspect concrete surfaces immediately upon removal of forms. Patch imperfections.

L. Modify or replace concrete not conforming to required lines, details, shapes and elevations. Do not patch, fill, touch-up, repair, or replace exposed architectural concrete except upon express direction of Architect.

M. Provide smooth rubbed finish on concrete surfaces to be left exposed such as concrete walls, columns, beams, and joists, except as otherwise indicated.

N. Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete. Moisture cure for seven (7) days minimum all interior slabs.

O. Drypack shall be packed solid under baseplates and thoroughly packed under pressure treated mudsills, per Structural Details, so as to obtain a continuous bearing.

3.06 CONSTRUCTION JOINTS

A. Provide construction joints in slabs in accordance with ACI 318.

1. For slabs-on-grade, place control joints at 15 feet maximum on center in each direction, unless shown otherwise on Drawings.

B. The surface of horizontal construction joints shall be cleaned and roughened by removing the entire surface and exposing clean aggregate solidly embedded in mortar matrix, in accordance with the following procedure:

The contact surface shall be thoroughly cleaned by chipping or sand-blasting the entire surface not earlier than 5 days after initial pour, or by an approved method that will assure equal bond, such as a thorough hose-washing of the surface not less than two or more than four hours after the concrete is placed (depending on setting time), wash water and chalk-like material being entirely cleaned from the surface.

In the event that the contact surface becomes coated with earth, sawdust, etc. after being cleaned, the entire surface so coated shall be re-cleaned.

A mix containing the same proportion of sand and cement used in the concrete, plus a maximum of 50 percent of the coarse aggregate, shall be placed on horizontal joints before proceeding with the regular specified mix. A delay at least until the concrete in columns and walls is no longer plastic must occur before casting or erecting beams, girders, or slabs supported thereon. Beams, girders, brackets, column capitals, and haunches shall be considered as part of the floor system, and shall be placed monolithically therewith.

3.07 FIELD QUALITY CONTROL

A. Testing: Comply with CBC, Title 24, Part 2, Section 1903A.

B. If compressive strength tests of cylinder specimens fail to show strengths assumed in design, take 4-inch diameter cores at representative locations throughout structure as designated by Inspector. Take cores in accordance with ASTM C42. The strength level of the concrete shall be considered satisfactory if the average strengths of the area or panel equals or exceed the specified strength at 28 days, with no individual strength test of such area or panel less than 5 percent below that specified. Concrete that does not meet or exceed these criteria shall be removed by the contractor and replaced with concrete that conforms to these criteria. Remove and replace defective concrete at no additional cost to Owner. Be financially responsible for repair and replacement of other in-place materials affected by such removal and replacement.

Costs of taking core samples and performing tests required will be paid by Owner if tests prove satisfactory. If test fail to show required strengths, concrete contractor will be held financially responsible.

C. If the strength of the molded test cylinder falls below the minimum ultimate compressive strength assumed in the design, adjust the proportions of the mix for the remaining portion of the structure to give concrete of the assumed minimum strength.

D. Concrete will also be deemed defective which is not formed properly as indicated, is not true to intended alignment, is not plumb or level where so intended, is not true to intended grades, has sawdust or other debris embedded within it, or does not fully conform to other provisions of these specifications. As directed, remove and replace with concrete complying with these specifications.

3.08 CONCRETE FINISHES

A. Slab Levels: Surfaces shall finish true to 1/8-inch in 10 feet on a straight-edge and in direction with maximum high and low variance occurring in not less than 20 feet and with 1/16-inch maximum tolerance in one running foot. Particular care shall be taken to finish troweling around the edges of the slabs so finish surface edges shall be at same elevations as the rest of the top surface of the slab. Slabs shall be surveyed continuously during pour.

B. Concrete Sealer: Concrete floors not indicated in the schedule to receive other finish shall receive two coats of sealer specified this section. Concrete to receive sealer shall be cured with specified concrete sealer that functions also as cure. Use the same material for each application.

C. Steel Trowel Finish: Interior slabs shall receive a monolithic steel trowel finish. Surfaces shall be screeded, wood floated, and steel-troweled. Finish shall be a smooth, hard, dense, impervious surface, free of defects. Finishers shall work from knee boards laid flat upon the surface. Mechanical troweling machines may be used if the desired finish and level tolerances can be obtained by their use, but finishing shall be by hand troweling.

1. Slabs to receive tile, carpet or adhered finishes shall receive light/medium broom finish to create "tooth" for adhesive.

D. Depressed slabs shall be finished by tamping slab with an open grid tamper, screeding with a straightedge and wood floating to a true and uniform surface, true to tolerance of 1/4-inches in 10 feet.

3.09 CONCRETE CURING AND PROTECTION

A. General: At slabs that do not receive concrete sealer, per 2.01D, provide the following: Concrete Curing per Section 5.11, ACI 318. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Concrete shall be maintained above 50 degrees and continuously moist for not less than 7 days.

Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

B. Slab Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover during, and by combinations thereof, as herein specified. Provide Moisture-Curing by the following Methods:

1. Keep concrete surface continuously wet by covering with water. Continuous water-fog spray, for seven (7) days minimum.

2. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof type of adhesive. Immediately repair holes or tears during curing period using cover material and waterproof tape, for seven (7) days minimum.

3. Provide Curing and Sealing Compound to exterior slabs, walks, and curbs, as follows:

a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Re-coat areas subjected to heavy rainfall within 3 hours after initial application.

b. Maintain continuity of coating and repair damage during curing period.

c. Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete, such as liquid floor hardener, waterproofing, damp proofing, membrane roofing, ceramic or quarry tile, vinyl composition tile (VCT), glue-down carpet, painting, and other coatings and finish materials, unless otherwise acceptable to Architect.

d. Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

4. Curing Unformed Surfaces:

a. Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of moisture curing method.

b. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise directed.

5. Sealer and Dustproofer: Apply two (2) coats of specified curing and sealing compound to Interior slab surfaces not receiving any other finish.

6. Concrete (other than high-early-strength) shall be maintained above 50 degrees F. and in a moist condition for at least the first seven (7) days after placement, except when cured in accordance with Section 5.11, ACI 318.

3.10 PROTECTION

A. Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Exposed Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

1. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

2. Grout base plates and foundations as indicated, using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated.

3. Steel Pan Stairs: Provide concrete fill for steel pan stair treads and landings and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp, and finish concrete surfaces as scheduled.

C. Concrete Surface Repairs: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect.

1. Cut out honeycomb, rock pockets, voids over 1/4 inch in dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

2. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

D. Repair of Formed Surfaces:

1. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface, and stains and other discolorations that cannot

be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.

2. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

E. Repair of Unformed Surfaces:

1. Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness using a template having required slope.

2. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01-inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

3. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.

4. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Architect.

5. Site walls: Remove cracked, honeycombed or defective concrete as required by the Architect from joint to joint. Patching, calking, filling or repairing will not be permitted.

F. Repair Defective Areas:

1. Repair defective areas, except random cracks and single holes not exceeding 1-inch diameter, by cutting-out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance around.

2. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

3. Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

4. Site walls: Remove cracked, honeycombed or defective concrete as required by the Architect from joint to joint. Patching, calking, filling or repairing will not be permitted

5. Perform structural repairs with prior approval of Architect of Structural Engineer for method and procedure, using specified epoxy adhesive and pressure grouting.

6. Repair method not specified above may be used, subject to acceptance of Architect.

G. Mitigation of Unacceptable High Moisture Emission Levels: Interior slabs-on-grade tested at levels in excess of 5.0 lbs/1000 s.f. shall be further evaluated with additional calcium chloride tests. Once levels are established, additional preparation measures shall be employed (depending on the magnitude of moisture levels) using one or both of the following products:

2 coats of Super-Krete
2 coats of Rust-Oleum 6000 system

END OF SECTION

07 00 00

THERMAL AND MOISTURE PROTECTION

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 07 10 00

DAMPPROOFING AND WATERPROOFING

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes: Waterproofing membrane systems for below-grade, vertical and horizontal applications, around pits, and beneath finish flooring systems over occupied, or to-be-occupied areas, as indicated on the drawings and specified herein.

B. Related Sections:

1. Roofing: see Division 7 – Thermal and Moisture Protection.
2. Traffic membranes

1.02 GUARANTEE

A. Provide a (10) ten-year unconditional guarantee against defects of materials and workmanship which allows water or moisture into areas of the structure which were to be protected by this membrane. Pay for costs of repairing or replacing the defective membrane, as well as all costs of exposing and recovering membrane, and consequential damages to persons and property resultant of defective materials or workmanship.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Horizontal Locations:

1. Provide a fluid applied, self-leveling, polyurethane system such as Sonneborn® HLM 5000 manufactured by BASF, Vulkem 201L manufactured by Tremco, or Perma-Gard III manufactured by Neogard.

2. Horizontal Protection Course: Sonneborn Protection Course II manufactured by BASF, or "Sealtight PC-2" by W.R. Meadows.

B. Vertical Below-Grade (Liquid applied not permitted):

1. Provide CCW MiraDRI by Carlisle, Bituthene 4000 by W.R. Grace, or MEL-ROL by W.R. Meadows.

2. Below grade provide 1/2-inch thick fiberboard, 1/2-inch polystyrene insulation or 1/8-inch asphaltic hardboard protection course. Provide 1/4-inch asphaltic board at planter areas.

3. Provide min. 3” PVC perforated pipe at fiberboard bottom, in 1-foot diameter ¾” gravel and Mirafi 140N by Tencate down length of vertical surface. Connect pipe to nearest storm drain.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install systems using waterproofing installers. Roofing trades will not be acceptable to perform this work.

B. Install systems in strict accordance with manufacturer's specifications. Obtain manufacturer's approval of substrate conditions prior to installing materials.

C. Filter Fabric Installation:

1. Install the filter fabric facing out toward the backfill (the direction from which the water will come).

2. Panels shall be lapped by a minimum of 2 rows of dimples (2 inches) on all edges. Both the core and the filter fabric should be shingled in the direction of the water flow.

3. Attach the drain using a general construction grade adhesive, pressure -sensitive adhesive, or a mastic used for membrane applications. The membrane and drain core should be clean and dry. Care should be taken that the adhesive is compatible with the damp-proofing material or waterproofing membrane and the drain core.

4. At the footing, place the core behind the perimeter drain tile and wrap the filter fabric around it and up behind the drain core.

5. The drain shall be cut with a sharp knife or shears.

6. Tuck the filter fabric behind the core to cover exposed edges.

7. Tears or punctures in fabric shall be covered with new filter fabric.

8. Backfill as soon as possible taking care not to over compact.

D. Provide reinforcing strips, and backer rods necessary for joints and cracks.

E. Flood Testing Drains: Flood test each drain for leaks, after completing roofing and flashing but before overlying construction is placed. Plug or dam drains, and flood with potable water.
1. Flood to an average depth of 1-1/2 inches not exceeding a depth of 2.5 inches.
2. Flood each area for 24 hours.
3. After flood testing, repair leaks, repeat flood tests and make further repairs until roofing and flashing installations are watertight.

F. Additional Testing: Set a sprinkler on the roof and run for approximately 1 hour, then move to a new section. Provide an observer below the roof substrate to identify any water intrusion.

1. After flood testing, if water intrusion is noted, repair leaks, repeat flood tests, and make further repairs until drain and flashing installations are watertight.

3.02 FIELD QUALITY CONTROL

A. Tests: Once systems (except horizontal protection course) are installed, applications shall be water tested. Perform in such a way that watertight integrity is fully demonstrated with standing water for at least 24 hours. Allow Architect and Owner to witness this test. Correct defects, then re-test. Continue this procedure until no leaks exist.

END OF SECTION

SECTION 07 13 00

SHEET WATERPROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Extent of sheet membrane waterproofing work as shown on the Drawings and is hereby defined to include all sheet materials applied with sealed joints and flashings as needed to form concealed waterproof membranes.

1.02 SUBMITTALS

A. Comply with pertinent provisions of Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit specifications, installation instructions and general recommendations from waterproofing manufacturer, for sheet membrane waterproofing.

1.03 QUALITY ASSURANCE

A. Manufacturer: Obtain primary waterproofing materials of each type required from a single manufacturer to greatest extent possible. Provide secondary materials only as recommended by manufacturer of primary materials.

B. Installer: Shall have not less than 3 years of successful experience in installation of waterproofing sheets similar to requirements for this project, and which is acceptable to, or licensed by, manufacturer of primary waterproofing materials.

1.04 PROJECT CONDITIONS

A. Substrate: Proceed with work of this section only after substrate construction, openings, and penetrating work have been completed.

B. Weather: Proceed with waterproofing an associated work only when existing forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.

1.05 SPECIAL PROJECT WARRANTY

A. Provide written warranty agreeing to replace/repair defective materials and workmanship. Warranty includes responsibility for removal and replacement of other work which conceals sheet waterproofing.

1. Warranty period is 5 years after date of Notice of Completion.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use the following product, except on horizontal surface where water test is required. Do not use the 'bentonite' type.

1. Asphalt/Polyethylene Sheet Waterproofing: Self-adhering membrane of rubberized asphalt integrally bonded to polyethylene sheeting, formed into uniform flexible sheets of no less than 56 mils thickness, in widths of no less than 36 inches, and complying with the following:

a. Tensile Strength (ASTM D412): 250 psi minimum

b. Ultimate Elongation (ASTM D412): 200% minimum

c. Brittleness Temperature (ASTM D746)" -25 degrees F. (-32 degrees C.)

d. Hydrostatic Head Resistance: 75 feet minimum

e. Water Absorption (ASTM D570): Not more than 0.5% weight gain for 48 hours of immersion at 70 degrees F. (21 degrees C.).

f. Products/Manufacturers: Provide one of the following, or approved equal:

Bituthene®: W.R. Grace & Co.
Polyguard 650: Polyguard Products, Inc.
MEL-ROL: W.R. Meadows, Inc.

2.02 ACCESSORIES

A. Adhesives: Provide types of adhesive compound and tapes recommended by waterproofing sheet manufacturer, for bonding to substrate (if required), for waterproof sealing of seams in membrane, and for waterproofing sealing of joints between membrane and flashings, adjoining surfaces and projections through membrane.

B. Primers: Provide type of concrete primer recommended by manufacturer of sheet waterproofing material for applications required.

C. Flashing Materials: Except as otherwise indicated, provide types of flexible sheet material recommended by waterproofing sheet manufacturer for flashing.

D. Protection Course: Provide type recommended by waterproofing sheet manufacturer, include adhesive recommended by Manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

A. Inspect substrate and conditions under which waterproofing work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Prior to installation of waterproofing and associated work, meet at project site with Waterproofing Materials Manufacturer's Representative, and Inspection and Testing Agency Representative (if any), for purpose of reviewing material selections and procedures to be followed in performing work.

B. On concrete decks, immediately before placement of waterproofing sheet, grind surface lightly with terrazzo grinder or similar device, to ensure removal of projections which might penetrate sheet. Clean deck of loose material.

C. Apply primer to concrete and masonry surfaces at rate and when recommended by manufacturer of primary waterproofing materials. Prime only area which will be covered by waterproofing membrane in same working day; reprime areas not covered by waterproofing membrane within 24 hours.

3.03 INSTALLATION

A. Comply with manufacturer's instructions for handling and installation of sheet waterproofing materials, except where more stringent requirements are shown or specified.

B. Coordinate installation of waterproofing materials and associated work to provide complete system complying with recommendations of manufacturer. Schedule installation to minimize period of exposure of sheet waterproofing materials.

C. Extend waterproofing sheet and flashings as shown to provide complete membrane over area indicated to be waterproofed. Seal to projections through membrane and seal seams. Bond to vertical surfaces and also, where shown or recommendations by manufacturer, bond to horizontal surfaces.

D. Install protection course of type indicated over completed membrane, complying with manufacturer's recommendations for both waterproofing sheet and protection course materials.

E. Flood Testing Drains: Flood test each drain for leaks, after completing roofing and flashing but before overlying construction is placed. Plug or dam drains, and flood with potable water.
1. Flood to an average depth of 1-1/2 inches not exceeding a depth of 2.5 inches.
2. Flood each area for 24 hours.
3. After flood testing, repair leaks, repeat flood tests and make further repairs until roofing and flashing installations are watertight.

F. Additional Testing: Set a sprinkler on the roof and run for approximately 1 hour, then move to a new section. Provide an observer below the roof substrate to identify any water intrusion.
1. After flood testing, if water intrusion is noted, repair leaks, repeat flood tests, and make further repairs until drain and flashing installations are watertight.

3.04 PERFORMANCE REQUIREMENTS

A. It is required that waterproof membranes be watertight and not deteriorate in excess of limitations published by manufacturer.

B. In-Place Testing: Before completed membranes on horizontal surfaces are covered by protection course or other work, test for leaks with 2-inch depth of water maintained for 24 hours. Repair all leaks revealed by examination of substructure and repeat test until no leakage is observed.

3.05 PROTECTION

A. Institute all required procedures for protection of completed membrane during installation of work over membrane and throughout remainder of construction period. Do not allow traffic of any type on unprotected membrane.

END OF SECTION

SECTION 07 21 00

THERMAL INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Thermal, fire, and acoustical insulation and isolation materials as indicated on the Drawings and specified herein.

B. Related Sections:

1. Framing to which insulation is to be attached, see Division 5 and Division 6.
2. Roofing: see Division 7.

1.02 REFERENCE STANDARDS

A. Ensure installation compliance with CBC, Title 24.

B. ASTM C553 and E84.

1.03 SUBMITTALS

A. Submit manufacturer's product literature and installation instructions for each type of insulation material required.

B. Submit certified test reports showing compliance with performance values, including r-ratings (aged for plastic insulations), densities, compression strengths, fire performance characteristics, perm ratings, water absorption ratings and similar properties.

C. Submit CHPS or LEED certification for recycled content and low emitting materials.

1.04 QUALITY ASSURANCE

A. Provide a certification of insulation and post on project, stating that work of this section conforms to the requirements of this section of specifications and Title 24.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Batt Insulation at Horizontal Locations:

1. Provide CertainTeed Corporation, CertaPro Batts, Kraft Faced, or Foil Faced, flanged, in thicknesses necessary to meet aged R-30 value (unless otherwise noted), expressed as average in and out value. Chips certified for low emitting and recycled content.

2. Flame Spread Rating: 25 or less in accordance with ASTM E84.

3. Smoke Density Developed Rating: 50 or less in accordance with ASTM E84.

B. Batt Insulation at Vertical Locations:

1. Provide CertainTeed Corporation, CertaPro Batts, Kraft Faced, or Foil Faced, flanged (or approved equal), in thickness necessary to meet aged R-19 value (unless otherwise noted), expressed as average in and out value. Chips certified for low emitting and recycled content.

2. Flame Spread Rating: 25 or less in accordance with ASTM E84.

Note: Specified R-values are for materials only and are not to include installation values.

3. Smoke Density Factor: Not to exceed 450.

C. Acoustical Insulation:

1. Provide CertainTeed Corporation, CertaPro Batts, Plain, fiberglass batts (or approved equal), minimum of 3-1/2 inches thick, installed as specified in indicated assemblies.

2. Flame Spread Rating: 25 or less in accordance with ASTM E84.

3. Smoke Density Factor: Not to exceed 450.

4. Provide acoustical insulation in all interior partitions and extend insulation to underside of roof structure.

D. Rigid insulation over metal deck: Provide preformed, double layer, roofing insulation boards that comply with requirements, selected from manufacturer's standard sizes and of thickness, to provide a complete roofing assembly of 0.033 minimum U-Value.

1. Provide preformed, tapered insulation boards. Verify with structure and roof plan if roof slope is provided by tapered insulation or structure slope. Provide tapered insulation for crickets where roof slope is provided by structure. Provide tapered insulation for roof slope where structure is not sloped. Slope to drain and fabricate with the following taper:

a. 1/4-inch per 12 inches (1:48), unless otherwise indicated.

2. Polyisocyanurate Board Insulation: Rigid, cellular Polyisocyanurate thermal insulation with core formed by using HCFCs as blowing agents complying with ASTM C1289, classified by facer type as follows:

a. Facer Type: Type II, felt or glass-fiber mat on both major surfaces.

3. Insulation Accessories: Furnish roofing insulation accessories recommended by insulation manufacturer for intended use and compatible with roof deck and sheet roofing materials.

a. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions of FM 4470, designed for fastening roofing insulation to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.

4. Insulation Attachment: Secure first layer of Polyisocyanurate Board insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roofing insulation to deck type indicated. Install subsequent layer of 1 inch thick board of insulation in a solid mopping of hot roofing asphalt.

a. Fasten insulation according to requirements of FM's "Approved Guide" for specified Windstorm Resistance Classification, and the roofing system manufacturers' written instructions.

D. Fire Safing: Provide USG Thermafiber® Fire Safing Insulation, or other approved, where

fire safing material is shown, or required. Thermafiber® Safing™ resists temperatures to 2,000ºF. (1.093ºC) and is noncombustible.

2.02 COMPONENTS

A. Acoustical Isolators: Provide isolating and acoustical clamps and sleeves manufactured by Specialty Products & Insulation Company, or other approved, as approved by local codes.

2.03 ACCESSORIES

A. Sag Wires: At all types of batt insulation, provide 18 gage galvanized wire at 16 inches on center. Staple wire at wood structure or sheet metal screw to metal structure to underside of structure, minimum three (3) per connection. Sag wires are not required where gypsum board is attached to the underside of roof framing.

B. Impaling and stick-pins, including washers, are to be provided as recommended in writing by insulation manufacturer.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Batt Insulation:

1. Insulate exterior areas adjacent and contiguous to spaces unheated, except where shown otherwise by Drawings.

2. Ensure secure attachment so that insulation will not sag over time. Friction fitting is not sufficient. Mechanically attach insulation. Double sided tape attachment is not acceptable.

a. Install foil and paper facing on warmer side of area being insulated.

b. Where insulated walls and underside of structure are being left exposed and unfinished, install sag wires at 16" o.c. (minimum) to support insulation.

c. Where insulation is being installed using impaling pins, ensure that washers are installed over pins after insulation is in place. Space pins as necessary to provide insulation installation which will not sag over time, and as recommended in writing by insulation manufacturer.

3. Ensure the continuous insulation of the building envelope. Tape joints, both ends and sides.

4. Provide two layers of insulation lapping openings by 14 inches or more where intended to be of sound resistive construction at locations such as telephone outlets, electrical, mechanical, or plumbing penetrations.

3.02 DEMONSTRATION

A. Comply with State of California Noise Insulation Standards.

B. Upon completion of installation of building envelope, certify compliance with requirements for Title 24.

END OF SECTION

SECTION 07 61 00

SHEET METAL ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Preformed, prefinished metal roofing, siding, flashings, parapet coping and gutters.

1. Minimum 30 lb. felt underlayment.

B. Related Work:

1. Rough Carpentry; refer to Section 06 10 00.
2. Sheet Metal Flashing and Trim; refer to Section 07 62 00.
3. Roof Accessories; refer to Section 07 72 00.
4. Joint Sealants; refer to Section 07 92 00.
5. Drainage and Vent Systems see Section 22 20 00 – Plumbing Systems.

1.02 REFERENCE STANDARDS

A. ASTM A792 – Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

B. SMACNA - Architectural Sheet Metal Manual

C. California Building Code.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01 33 00.

B. Indicate material profile, jointing pattern, jointing details, fastening methods and installation details.

C. Submit manufacturer's installation instructions in accordance with other sections of these specifications.

D. Submit manufacturer's certification stating that prefinished metal roofing complies with Chapter 15, Part 2, Title 24, California Building Code, for Class "B" or higher classification.

E. Samples: Submit manufacturer's standard profile samples in accordance with Section 01 33 00.

1. Submit samples from manufacturers’ full line of Kynar 500 coating colors.

F. Design Criteria:

1. Panel and attachment shall be designed to resist the following design loads:

Wind Load: 80 mph, exposure 'C'

2. The roof panel manufacturer shall submit a wind pressure map showing a fastening schedule along with attachment calculations stamped by a licensed professional engineer that address the design wind uplift conditions for the entire roof including perimeter and corner areas. The manufacturer shall further submit certification that the roof system, when attached per their recommendations,

complies with 1.03D of this specification section.

1.04 DELIVERY, STORAGE AND HANDLING

A. Panels should be stored on edge in a clean dry place. One end should be slightly elevated to allow moisture to run off rather than accumulate on the faces.

B. Panels with strippable plastic film must not be stored in the open exposed to the sun.

C. Stack preformed and pre-finished material to prevent twisting, bending, or abrasion and to provide ventilation. (Proper ventilation during storage is particularly important in the cast of natural finish such as galvalume coated steel.)

D. Prevent contact with materials during storage which may cause discoloration or staining.

E. In handling pre-finished panels, lift up panels and do not slide panels when unstacking.

1.05 QUALITY ASSURANCE

A. Submit report from independent testing laboratory on results of color retention under exposure to ultra-violet light.

1.06 WARRANTY

A. Provide manufacturer's standard material warranty for base metal and factory coating. Warranty to be based on actual project installation and environmental conditions.

B. Contractor shall warrant panels, flashings, sealants, fasteners and accessories against defective materials and/or workmanship, to remain weatherproof with normal usage for two (2) years following date of notice of completion.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS:

A. AEP-SPAN, Fontana, CA;

B. Butler Manufacturing Co., Kansas City, MO

C. Berridge Manufacturing Co., San Antonio, TX

D. Metal Sales Manufacturing Corporation, Fontana, CA

E. Centria, Moon Township, PA

2.02 SHEET MATERIALS

A. Panels:

1. Base Metal: Steel conforming to ASTM A653, minimum yield 43,500 psi, thickness 22 gauge.

a. Protective Coating: Zincalume conforming to ASTM A792, AZ50, thickness 1.6 mils.

2. Finish:

a. Exterior finish includes a 0.2 mil thick corrosion-resistant primer and a 0.8 mil thick finish coat of Polyvinylidene Fluoride (PVF-2), full 70%

Kynar 500/Hylar 5000 for a total dry film thickness of 1.0 mil.

b. Interior finish to include a 0.15 mil thick epoxy primer and a 0.35 mil off white topcoat for a total dry film thickness of 0.50 mil.

3. Exterior Color: Color selected by Architect from manufacturers custom color range.

4. Configuration: Batten System with snap-on batten caps approximately 1-1/2" wide x 2 " high, spaced 16 inches on center. Panels shall have two (2) minor stiffening ribs in each panel to prevent oil-canning.

2.03 ACCESSORIES

A. Panel Clips: 22-gauge steel coated with G-60 per ASTM A653.

B. Fasteners: Stainless steel with Neoprene washers where required.

C. Sealant: As specified in Section 07 92 00 – Joint Sealants.

D. Parapet Copings and Exposed to View Flashings and Trim: Same material and finish as roof panels, fabricated to SMACNA details and standards, and per details shown on the Drawings.

E. Gutters: Conforming to ASTM A635, G-90 galvanized, 22-gauge minimum thickness.

1. Profile as indicated and approved in shop drawings. Conform to SMACNA requirements.
2. Form sections square, true and accurate in size, in maximum possible lengths free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
3. Hem exposed edges of metal. Solder shop formed metal joints and remove flux.
4. Fabricate with welded connection pieces and epoxy liner for watertight installation. Perform water test.
5. Anchoring devices in conformance with SMACNA requirements.

2.04 FABRICATION

A. Fabrication: Unless otherwise shown on Drawings or specified herein, fabricate panels in one (1) piece lengths and flashings and accessories in longest practical lengths.

1. Roofing panels shall be factory formed.

2. Field formed panels are not acceptable.

B. Exposed adjacent flashing shall be of the same material and finish as the roof panels.

C. Flashings, hem exposed edges on underside 1/2-inch.

2.05 UNDERLAYMENT

A. Provide 30 lb. inorganic asphalt saturated felt.

B. Slip Sheet: Rosin surfaced building paper weighing not less than 5 pounds per 100 square feet.

C. Mineral Board: Sloping roof at metal deck; provide 1/2-inch thick Loadmaster Duraflex Mineral Board over metal decking. (Loadmaster, 1-800-527-4035.)

2.06 BATTEN SEAM SYSTEM

A. Structural panels and snap-on battens shall be roll formed in continuous lengths (maximum 40 feet).

B. Batten spacing shall be 16 inches on center.

C. Battens shall have a nominal installed height of 2 inches.

D. Panels and battens are to be continuous at change of slope where practical.

E. Attachment to structural supports with 1-1/2 inches long cadmium plated screws through the hidden clip and the panel. Maximum spacing 60 inches on center for open span structural supports. Intermediate batten clips attached through the panel, 20 inches on center maximum with 10 x 3/4-inch TEKS screws.

F. Attach to substrate with 2-1/2-inch-long ring shank galvanized nails through the hidden batten clip and the panel spaced 20 inches on center.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Inspect substrates to verify they are clean and smooth, free of depressions, waves, or projections, properly sloped.

B. Inspect structural support to verify it is properly located, horizontal supports level, and vertical supports plumb.

C. Verify location of penetrations and see that they are properly sleeved where required.

D. Clearing and Testing of all roof drains and leaders.

3.02 INSTALLATION

A. Panels:

1. Follow roof panel manufacturer's directions.

2. Install panel seams vertically, except where otherwise indicated on drawings.

3. Do not stretch or compress panel sidelap interlocks.

4. Secure panels without warp or deflection.

5. Fully engage snap-on batten caps.

6. Remove strippable protective film immediately prior to installation.

B. Allowable Erection Tolerance:

1. Maximum Alignment Variation: 1/4-inch in 40 feet.

C. Flashing:

1. Follow manufacturer's directions and Architect approved shop drawings.

2. Overlap roof panels at least 6 inches.

3. Install flashings to allow for thermal movement.

D. Cutting and Fitting:

1. Neat, square and true. Torch cutting is prohibited.

2. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.

3. Where necessary to saw cut panels, debur and treat with galvanic paint.

E. Install 30 lb. felt underlayment in two layers shingled, and nailed in place, 6-inch side laps, 12 inch end laps.

3.03 CLEANING

A. Touch-up damaged paint surfaces with air dry touch-up paint provided by the panel manufacturer. Follow directions carefully to minimize color differences. Small brush application only; do not spray touch-up paint.

B. Cleaning and Repairing:

1. At completion of each day's work and at work completion, sweep panels, flashing and gutters clean. Do not allow fasteners, cuttings, filings or scraps to accumulate on roof surface.

2. Remove debris from project site upon work completion or sooner, if directed.

3.04 FIELD QUALITY CONTROL

A. Final inspection will be performed by a firm appointed and paid for by the Owner.

END OF SECTION

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide materials, labor and equipment necessary for the completion of roof access hatches.

B. Related work:

1. Ladders, see Section 05 50 00 – Metal Fabrications.

2. Modified Bituminous Membrane Roofing; refer to Section 07 52 00.

3. Sheet Metal Flashing and Trim; refer to Section 07 62 00.

1.02 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01 33 00 – Submittal Procedures and Section 01 25 00 – Substitution Procedures. Submit manufacturer's standard technical product data, rough-in diagrams, details, installation instructions and general product information. Data shall show thickness, type, grade, and class of materials; dimensions; details of construction and installation details.

B. Submit manufacturer's installation and operation instructions for roof access hatches.

PART 2 - PRODUCTS

2.01 ROOF ACCESS HATCHES

A. Provide prefabricated units manufactured of galvanized sheet steel, prime painted complete with cam-action spring-loaded opener and positive latching device.

1. Provide one of the following units 2’-6” x 3’-0” size, unless noted otherwise:

a. Bilco,Type S

b. Milcor, Model M-1

c. Dur-Red Model LH

B. Provide unit with fully insulated 14-gauge lid and integral curb. Weatherstrip lid with continuous bulb seal.

C. Provide solid, non-compressible mounting blocking at railing anchor points for mounting the safety rail.

D. Provide each unit of size necessary to comply with Drawings. Weatherstrip lid.

E. Curb height shall be modified to make counterflashing at least 8-inches above surface of tapered roof insulation where it occurs. Coordinate with roof deck contractor.

2.02 ROOF ACCESS LADDER SAFETY POST

A. Provide spring balanced ladder safety post at all roof hatch ladder, Bilco Model LU-2-steel with hot dipped galvanized finish. Mount to the top two rungs of the roof access ladders.

2.03 SAFETY RAIL AT ROOF HATCH

A. KEEHATCH Model No. RHSR-SS Railing System for standard 2’-6” x 3’-0” roof hatch.

2.04 ROOF ANCHORS

A. In sloped roof construction, where roof slope exceeds 2:12, provide roof anchors. Roof Anchors shall be Simplified Safety CB-12 or CB-18, or equal. Install per manufacturer’s recommendations.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that units are adequately braced for seismic conditions and loads, and that conjunctive roofing, mechanical and electrical operations will provide a watertight and weathertight installation.

B. Clearing and testing of all roof drains and leaders.

3.02 INSTALLATION

A. Install all roof accessories in accordance with manufacturer's instructions, and prior to any other roofing operations. No cutting-in later of roof accessories will be allowed.

END OF SECTION

SECTION 07 84 13

PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work specified in this section.

1.02 DEFINITIONS

A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in fire rated wall and floor assemblies.

1.03 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

A. Only tested firestop systems shall be used in specific locations as follows:

1. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

2. Blank openings through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

3. Openings and penetrations in fire-rated partitions or walls containing fire doors.

4. Openings around structural members which penetrate floors or walls.

1.04 RELATED WORK OF OTHER SECTIONS

A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including:

1. Section 03 30 00 – Cast-In-Place Concrete

2. Section 07 92 00 – Joint Sealants

3. Section 09 29 00 – Gypsum Board

4. Section 22 01 00 – Plumbing General Provisions

5. Section 23 01 00 – HVAC General Provisions

1.05 REFERENCES

A. Test Requirements: ASTM E814, "Standard Method of Fire Tests of Penetration Firestop Systems."

B. Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E814 under their designation of UL 1479 and publishes the results in their "FIRE RESISTANCE DIRECTORY" that is updated annually.

1. UL Fire Resistance Directory:

    a. Firestop Devices (XHJI)

    b. Fire-Resistance Ratings (BXUV)

    c. Through-Penetration Firestop Systems (XHEZ)

    d. Fill, Voids, or Cavity Materials (XHHW)

    e. Forming Materials (XHKU)

C. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments

D. ASTM E84, “Standard Test Method for Surface Burning Characteristics of Building Materials.”

E. Inspection Requirements: ASTM E2174, “Standard Practice for On-Site Inspection of Installed Fire Stops.”

F. All major building codes: ICC, SBCCI, BOCA, and IBC.

G. NFPA 101 - Life Safety Code

H. NFPA 70 - National Electric Code

1.06 QUALITY ASSURANCE

A. A manufacturer's direct representative (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer's written recommendations published in their literature and drawing details.

B. Firestop System installation must meet requirements of ASTM E814 or UL 1479 tested assemblies that provide a fire rating equal to that of construction being penetrated.

C. Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.

D. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

E. For those firestop applications that exist for which no UL tested system is available through a manufacturer, an engineering judgment derived from similar UL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgment drawings must follow requirements set forth by the International Firestop Council.

1.07 SUBMITTALS

A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of UL firestop systems to be used and manufacturer's installation instructions to comply with Section 01 33 00.

B. Manufacturer's engineering judgment identification number and drawing details when no UL system is available for an application. Engineer judgment must include both project name and contractor’s name who will install firestop system as described in drawing.

C. Submit material safety data sheets provided with product delivered to jobsite.

1.08 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer’s products per specified requirements. A manufacturer’s willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at jobsite.

C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.

D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

E. Do not use damaged or expired materials.

1.10 PROJECT CONDITIONS

A. Do not use materials that contain flammable solvents.

B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

C. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

PART 2 - PRODUCTS

2.01 FIRESTOPPING, GENERAL

A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

C. Firestopping Materials are either “cast-in-place” (integral with concrete placement) or “post installed.” Provide cast-in-place firestop devices prior to concrete placement.

2.02 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with through penetration firestop systems (XHEZ) listed in Volume II of the UL Fire Resistance Directory, provide products of the following manufacturers as identified below:

1. Hilti, Inc., Tulsa, Oklahoma, Phone: (800) 879-8000.

2. Provide products from the above acceptable manufacturer; *no substitutions will be accepted.*

2.03 MATERIALS

A. Use only firestop products that have been UL 1479 or ASTM E814 tested for specific firerated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Cast-in place firestop devices for use with non-combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:

1. Hilti CP 680 Cast-In Place Firestop Device

C. Sealants, caulking materials, or foams for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:

1. Hilti FS-ONE Intumescent Firestop Sealant

2. Hilti CP 604 Self-Leveling Firestop Sealant

3. Hilti CP 620 Fire Foam

D. Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:

1. Hilti CP 601S Elastomeric Firestop Sealant

2. Hilti CP 606 Flexible Firestop Sealant

3. Hilti FS-ONE Intumescent Firestop Sealant

4. Hilti CP 604 Self-Leveling Firestop Sealant

E. Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:

1. Hilti FS-ONE Intumescent Firestop Sealant

F. Foams, Intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti FS-ONE Intumescent Firestop Sealant

2. Hilti CP 618 Firestop Putty Stick

3. Hilti CP 620 Fire Foam

G. Non curing, re-penetrable intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti CP 618 Firestop Putty Stick

H. Wall opening protective materials for use with U.L. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:

1. Hilti CP 617 Firestop Putty Pad

I. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable:

1. Hilti CP 643 Firestop Collar

2. Hilti CP 644 Firestop Collar

3. Hilti CP 648 Wrap Strips

J. Materials used for complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti CP 637 Firestop Mortar

2. Hilti FS 657 Fire Blocks

3. Hilti CP 620 Fire Foam

K. Non curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti FS 657 Fire Blocks

L. For blank openings made in fire-rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable:

1. Hilti FS 657 Fire Blocks

M. Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E814 which is equal to the time rating of construction being penetrated.

PART 3 - EXECUTION

3.01 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Verify penetrations are properly sized and in suitable condition for application of materials.

2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.

3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.

4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.

5. Do not proceed until unsatisfactory conditions have been corrected.

3.02 COORDINATION

A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work. Ensure device is installed before placement of concrete.

B. Responsible trade to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interferences.

3.03 INSTALLATION

A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory.

B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration materials.

1. Seal all holes or voids made by penetrations to ensure an air and water-resistant seal.

2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.

3. Protect materials from damage on surfaces subjected to traffic.

3.04 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

B. Keep areas of work accessible until inspection by applicable code authorities.

C. Inspection of through-penetration firestopping shall be performed in accordance with ASTME 2174, “Standard Practice for On-Site Inspection of Installed Fire Stops” or other recognized standard.

D. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

3.05 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes joint sealants for the applications indicated in the Joint-Sealant Schedule at the end of Part 3.

B. Related Sections include the following:

1. Division 1 Section "LEED Requirements" for additional LEED requirements
2. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

1.03 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.04 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. LEED Submittals:
1. Credits MR 4.1 and 4.2: Product Data indicating percentages by weight of postconsumer and preconsumer recycled content.
   a. Include statement indicating costs for each product having recycled content.
2. Credit EQ 4.1: Manufacturers' product data for installation sealants, including printed statement of VOC content.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.06 PROJECT CONDITIONS

B. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.02 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.03 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Single-Component Neutral- and Basic-Curing Silicone Sealant:

1. Products:

a. GE Silicones; SilPruf LM SCS2700.
b. Tremco; Spectrem 1 (Basic).
c. GE Silicones; SilPruf SCS2000.
d. Sonneborn, Division of ChemRex Inc.; Omniseal.
e. Tremco; Spectrem 3.

f. Tremco; Spectrem 2

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 50.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.

D. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant:

1. Products:

a. Pecora Corporation; 898.
b. Tremco; Tremsil 600 White.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: To sensitive surface joint substrates indicated, O.

a. Use O Joint Substrates: Galvanized steel and insulated glazing units.

E. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant:

1. Products:

a. Dow Corning Corporation; 786 Mildew Resistant.
b. GE Silicones; Sanitary SCS1700.
c. Tremco; Tremsil 200.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

2.04 URETHANE SEALANT

A. Multicomponent Pourable Urethane Sealant:

1. Products:

a. Pecora Corporation; Urexpan NR-200.
b. Schnee-Morehead, Inc.; Permathane SM 7201.
c. Tremco; THC-901.
d. Tremco; THC-900.

2. Type and Grade: M (multicomponent) and P (pourable).
3. Class: 25.
4. Use Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.

B. Single-Component Nonsag Urethane Sealant:

1. Products:

a. Sika Corporation, Inc.; Sikaflex - 1a.
b. Sonneborn, Division of ChemRex Inc.; NP 1.
c. Tremco; Vulkem 116.
d. Tremco; DyMonic 100

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Uses Related to Exposure: T (traffic) and NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

2.05 LATEX JOINT SEALANTS

A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.

B. Products:
1. Pecora Corporation; AC-20+.
2. Schnee-Morehead, Inc.; SM 8200.
3. Sonneborn, Division of ChemRex Inc.; Sonolac.
4. Tremco; Tremflex 834.

2.06 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.07 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

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

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include, but are not limited to, the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include, but are not limited to, the following:

    a. Metal.
    b. Glass.
    c. Porcelain enamel.
    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.04 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.05 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.06 SEALANT SCHEDULE

JOINT SEALANT	APPLICATION
Single and Multi-Component Neutral- and Basic-Curing Silicone Sealant	• Exterior perimeter joints at frames of doors, windows and louvers • Exterior control and expansion joints in ceilings and other overhead surfaces • Exterior vertical joints between different materials listed above • All other exterior vertical and horizontal nontraffic joints unless noted otherwise
Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant	• Exterior joints with galvanized steel or insulated glass substrates
Single-Component Mildew-Resistant Acid-Curing Silicone Sealant	• Interior joints between plumbing fixtures and adjoining walls, floors, and counters • Joints between counters and adjoining walls and floors at bathrooms, kitchens and other wet areas
Multicomponent Pourable Urethane Sealant	• Exterior horizontal nontraffic and traffic isolation and contraction joints in cast-in-place concrete slabs
Single-Component Nonsag Urethane Sealant	• Interior perimeter joints of exterior openings
Latex Sealant	• Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances

END OF SECTION

09 00 00

FINISHES

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 09 26 00

VENEER PLASTERING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies veneer plaster and veneer plaster base.

1.2 RELATED WORK:

A. Section 07 92 00, JOINT SEALANTS: Application of Sealants.

B. Section 09 29 00, GYPSUM BOARD: Gypsum Backing Board on Multi-Layer Systems.

C. Section 09 26 00, VENEER PLASTERING: Veneer Plaster.

1.3 TERMINOLOGY

A. Definitions and description of terms in accordance with ASTM C11, ASTM C843, ASTM C844, and as specified.

B. Underside of Structure Overhead: Where steel trusses or bar joists are shown, the underside of structure overhead is the underside of the floor or roof construction supported by the trusses or bar joists.

C. Yoked: Gypsum Board cut out for opening with no joint at the opening corners.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 00, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Sustainable Design Submittals as described below:

1. Postconsumer and preconsumer recycled content as specified in PART 2 - PRODUCTS.
2. Volatile organic compounds per volume as specified in PART 2 - PRODUCTS.

C. Manufacturer's Literature and Data:

1. Gypsum veneer plaster.
2. Gypsum Base for Veneer Plaster.
3. Accessories.
4. Joint reinforcing materials.
5. Laminating adhesive.

D. Shop Drawings:

1. Typical veneer plaster installation, showing corner details, casing details, control joint details, and other similar details.

E. Installers qualifications.

1.5 DELIVERY AND STORAGE

A. Deliver and store plaster materials in the manufacturer’s original unopened containers.

B. Store materials off the ground within a completely enclosed structure or enclosed within a weathertight covering. Store gypsum base and gypsum backing board flat to prevent warping and protect from excessive exposure to sunlight.

1.6 SCHEDULING

A. Commence application only after the area scheduled for veneer plaster work is completely weathertight.

B. The heating, ventilating, and air-conditioning systems should be complete and in operation prior to application of the plaster. If the mechanical system cannot be activated before veneer plastering is begun, the plastering may proceed in accordance with an approved plan to maintain the environmental conditions specified below.

C. Apply plaster prior to the installation of finish flooring and acoustic ceiling.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not expose the gypsum base to excessive sunlight prior to plaster application, as bond failure of the plaster may result.

B. Maintain a continuous uniform temperature of not less than 10 degrees C (50 degrees F) and not more than 27 degrees C (80 degrees F) for at least one (1) week prior to the application of veneer plaster, while the plastering is being done, and for at least one (1) week after the plaster is set.

C. Shield air supply and distribution devices to prevent any uneven flow of air across the plastered surfaces.

D. Provide ventilation to exhaust moist air to the outside during plaster application and set, and until plaster is dry.

E. In glazed areas, keep windows open top and bottom or side to side 76 to 101 mm (3 to 4 inches). Openings can be reduced by 50 percent when temperature is less than 4 degrees C (40 degrees F).

F. For enclosed areas lacking natural ventilation, provide temporary mechanical means for ventilation.

G. In unglazed areas subjected to hot, dry winds or temperature differentials from day to night of 10 degrees C (20 degrees F) or more, screen openings with cheesecloth or similar materials.

H. During periods of low indoor humidity, provide minimum air circulation following plastering operations and until plaster is dry.

1.8 QUALITY ASSURANCE

A. Installers Qualifications: Work is to be performed by installer having a minimum of three (3) years' experience for work relating to this Section. Submit installer qualifications.

1.9 PERFORMANCE REQUIREMENTS

A. Where indicated on construction documents, provide veneer plaster assemblies identical to those of assemblies tested for fire resistance according to ASTM E119 by a qualified testing agency.

B. Where indicated on construction documents, provide veneer plaster assemblies identical to those of assemblies tested for STC ratings according to ASTM E90 and classified according to ASTM E413 by a qualified testing agency.

1.10 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. ASTM International (ASTM):

C11-18b ..... Terminology Relating to Gypsum and Related Building Materials and Systems

C472-20 ..... Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete

C475/C475M-17 ..... Joint Compound and Joint Tape for Finish Gypsum Board Construction

C587-04(2018) ..... Gypsum Veneer Plaster

C631-09(2020) ..... Bonding Compounds for Interior Plastering

C840-20 ..... Application and Finishing of Gypsum Board

C843-17 ..... Application of Gypsum Veneer Plaster

C844-15 ..... Application of Gypsum Base to Receive Gypsum Veneer Plaster

C954-18 ..... Steel Drill Screws for the Application of Gypsum Panel Products Board or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in thickness

C1002-18 ..... Steel Drill Screws for the Applications of Gypsum Panel Products Board or Metal Plaster Bases

C1047-19 ..... Accessories for Gypsum Wallboard and Gypsum Veneer Base

C1396/C1396M-17 ..... Specification Gypsum Board

D3678-19 ..... Rigid Poly (Vinyl Chloride) (PVC) Interior-Profile Extrusions

E90-09(2016) ..... Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

E119-20 ..... Test Methods for Fire Tests of Building Construction and Materials

E413-16 ..... Rating Sound Insulation

C. Code of Federal Regulation (CFR):

40 CFR 59 ..... Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating

PART 2 - PRODUCTS

2.1 VENEER BASE

A. ASTM C1396/C1396M, plain, Type "X", 16 mm (5/8-inch) thick. Provide square edges, rounded, or tapered as recommended by the veneer plaster manufacturer.

2.2 GYPSUM VENEER PLASTER

A. ASTM C587. Minimum compressive strength of finish coat plaster to be 17.2 MPa (2500 psi) in accordance with ASTM C472.

2.3 ACCESSORIES

A. Corner Bead, Edge Trim and Control Joints: ASTM C1047 or ASTM D3678, except as specified.

B. Corner bead and edge trim (casings): Minimum 0.38 mm (0.015-inch) thick zinc-coated steel sheet or rigid PVC plaster.

1. Recycled Content of Metal Products: Post consumer content plus one-half of preconsumer content not less than percent.

C. Flanges not less than 22 mm (7/8-inch) wide with punch-outs or deformations as required to provide plaster bond.

2.4 JOINT REINFORCING TAPE

A. ASTM C475/C475M, paper tape.

2.5 LAMINATING ADHESIVE

A. ASTM C475/C475M joint compound chemical setting type or as recommended by veneer base manufacturer. VOC not to exceed 20 g/L; free of antifreeze and other deleterious impurities.

1. Sealant adhesive shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, (EPA Method 24).

2.6 FASTENERS

A. Screws: ASTM C1002 or ASTM C954.

B. Staples: Flattened zinc-coated steel wire, minimum 15 mm (9/16-inch) leg for securing corner beads or casing and minimum 9 mm (3/8-inch) leg for securing joint reinforcement.

2.7 BONDING COMPOUND

A. ASTM C631.

PART 3 - EXECUTION

3.1 INSTALLATION CRITERIA

A. Where fire rated construction is required for walls, partitions, columns, beams and floor-ceiling assemblies, construction to match that used in fire rating test and as shown on construction documents.

B. Sound Rated Assemblies and Materials: Construct as indicated on construction documents.

C. Ventilate unheated spaces above veneer plaster ceilings as per ASTM C844.

3.2 INSTALLATION OF VENEER BASE

A. Steel Framing:

1. Steel framing members to be installed as per ASTM C754.
2. Space framing at 406 mm (16 inches) on center maximum. Provide partitions to support applied loads such as cabinets and counters without exceeding the permitted deflection.
3. Partition Framing System:
    a. Provide metal non-load bearing framing and furring system capable of carrying a transverse load of 24 ksm (5 psf) without exceeding either the allowable stress or a deflection of L/240.
    b. Provide studs of 0.45 mm (0.0179 inch) maximum thickness for partitions having the same material and the same material thickness on both sides.
    c. For partitions using 0.45 mm (0.0179 inch) thick studs, the surfacing material to cover the full height of the partition on both sides, or the stud flange to be otherwise supported to ensure rigidity.
    d. Provide studs of 0.84 mm (0.0329 inch) minimum thickness for partitions having different materials or different material thickness on the two (2) sides.
    e. At partition ends, corners, and intersections, and at jambs of openings, fasten studs to runners with screws.
4. Special Framing:
    a. Build framing for beams, columns, soffits, and other special items to the sizes, shapes, or forms indicated on construction documents. Secure rigidly at each intersection with wallboard screws.
5. Shaftwall Framing System:
    a. Shaftwalls to be standard, tested designs.
    b. Provide metal framing in accordance with the shaftwall manufacturer’s printed instructions.
6. Ceiling Openings:
    a. Provide support members at ceiling openings such as required for access panels, recessed light fixtures, and for air supply or exhaust openings.
    b. Locate support members of not less than 38 mm (1-1/2 inch) main runner channels and suspension wires or straps to provide at least the minimum support specified herein for furring and wallboard attachment.
    c. Provide intermediate structural members for attachment or suspension of support members.
7. Wall Openings:
    a. At wall openings the framing system to provide for the installation and anchorage of the required subframes or finish frames.
    b. Attach steel frames securely through built-in anchors to the nearest stud on each side of the opening with wallboard screws.

c. Provide 0.84 mm (0.329 inch) minimum thickness double studs at both jambs of all doors openings.
d. For doors over 1219 mm (4 feet) wide, double doors, and for extra-heavy doors such as x-ray doors, provide doubled studs // // mm (// // inches) minimum thickness.
e. Spot grout door frames at the jamb anchor locations with joint compound applied just prior to application of gypsum base.

8. Blocking:
a. Provide blocking when mounting equipment.
b. Cut metal or wood blocking to fit in between the framing members.
c. Rigidly anchor blocking to the framing members.
d. Under no circumstances will accessories or other wall mount equipment be anchored directly to the veneer plaster system.

B. Veneer Base:
1. Apply gypsum base and backing board to framing and furring members in accordance with ASTM C844, as specified herein, and as indicated on construction documents.
2. Use veneer base of maximum practical length.
3. Install veneer base with long dimension direction as follows:
a. On ceilings, at 90 degrees to framing to which it is applied.
b. On partitions, horizontally or vertically, except when the partition is fire rated, apply base as designed in the fire rating test.
4. In vertical application of veneer base, use panels of length required to reach full height of vertical surfaces in one (1) continuous piece.
5. Erect veneer base so that the leading edge of the base is first attached to the open end of the metal stud flange.
6. Leave a space approximately 6 mm (1/4-inch) at bottom and top of veneer base for caulking or sealant.
7. Edge and End Joints:
a. Locate edge joints over framing in fire rated partitions.
b. Locate end joints over furring or framing in all cases.
c. Stagger end joints of adjoining boards or multiple layer boards.
8. Control Joints:
a. ASTM C844, Paragraph 7.4.
b. Locate at both side of jambs of openings if gypsum board is not yoked. Use only one (1) system throughout.
c. Not required for wall length less than 9144 mm (30 feet).
d. Do not extend veneer base across control joints.

e. Extend control joints the full height of the wall or length of soffit/ceiling veneer plaster membrane.

9. Two-Ply Construction:
   a. Apply in accordance with ASTM C844 with joints between layers staggered or offset and falling over framing member, except at control joints where they are to align.
   b. Use screws to hold veneer base in place.
10. Accessories:
   a. Set plastering accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces with screws or staples.
   b. Install in one piece, within the limits of the longest commercially available lengths.
   c. Corner Beads:
      1) At all external corners.
      2) Where required as grounds.
      3) Where indicated on construction documents.
   d. Casings Beads:
      1) At both sides of expansion and control joints, except as otherwise shown on construction documents.
      2) Where veneer plaster terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.
      3) Where non-load bearing veneer plastered surfaces abuts load bearing members.
      4) Where indicated on construction documents.
11. Concealed Surfaces: Do not omit veneer plaster behind cabinets, furniture, furnishings, or similar removable items. Omit veneer plaster above suspended ceilings and behind wood paneling unless required to maintain fire resistance or STC ratings.

3.3 SEALANT APPLICATION:

A. Apply sealants to veneer plaster base to cut outs, penetrations, and intersections with adjoining materials prior to application of veneer plaster for acoustical partitions.

B. Coordinate with Section 07 92 00, JOINT SEALANTS, for application of sealants.

3.4 VENEER PLASTER APPLICATION OVER GYPSUM BASE:

A. Apply gypsum veneer plaster in accordance with ASTM C843, and with the manufacturer's approved installation instructions where such instructions are additional to or more restrictive than the requirements of ASTM C843. Apply plaster as a one-component two-component system. Provide minimum plaster thickness as recommended by the manufacturer, but in no case less than 1.6 mm (1/16 inch) for one-component system. 1.6 mm (1/16 inch) for base coat and 0.8 mm (1/32 inch) for finish coat of a two-component system.

B. Joint Reinforcement: ASTM C843.

C. Apply smooth-trowel finish.

D. Extend finish to underside of structure overhead for fire partitions, smoke partitions, shafts, and sound rated partitions. Seal penetrations and edges for fire, smoke or acoustical requirements.

E. At new suspended ceilings, extend finish not less than 101 mm (4 inches) above suspended ceiling.

F. At existing ceilings, finish may terminate at ceiling except for fire, smoke, or sound rated partitions conditions stated above.

G. Seal and reinforce all joints and fastener heads above ceilings.

3.5 CLEANUP AND PATCHING:

A. Remove any plaster splashes from adjacent surfaces. Repair defects in veneer plaster. Plaster surfaces are to be smooth, clean, and in condition to receive the finishing materials that will be applied.

END SECTION 09 26 00

SECTION 09 29 00

GYPSUM BOARD

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Framing required for gypsum board ceilings, blocking and furring channels, as required, gypsum board walls and ceilings and taped and sanded joint treatment where required, including adhesives and texturizing as indicated on the Drawings and specified herein.

B. Related Sections:

1. Section 09 90 00 – Painting and Coating.

1.02 REFERENCE STANDARDS

A. Work to conform to California Building Code, Chapter Title 24, Part 2.

B. Perform gypsum board systems work in strict accordance with recommendations of the following reference standards, unless otherwise specified in this section or required by local code. Keep a copy of applicable reference standards in field office for duration of project.

1. ASTM C1396 – Standard Specification for Gypsum Board.

2. ASTM C1177 – Standard Specification for Glass Mat Gypsum Substrate for use as Sheathing.

3. ASTM C475 – Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

4. ASTM C514 – Standard Specification for Nails for the Application of Gypsum Board.

5. ASTM C557 – Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

6. ASTM C1002 – Standard Specification for steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

7. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.

8. ASTM E413 – Classification for Rating Sound Insulation.

9. ASTM C840 – Standard Specification for Application and Finishing of Gypsum Board.

10. ASTM D3273 – Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

11. Gypsum Association - GA-216 – Recommended Specifications for the Application and Finishing of Gypsum Panel Products.

12. Gypsum Association - GA-254 – Recommended Specifications for the Fire-Resistant Gypsum Sheathing.

13. Underwriters Laboratories, Inc. (UL) - Building Materials Directory.

14. Underwriters Laboratories, Inc. (UL) - Fire Resistance Index.

1.03 SUBMITTALS

A. Submit copies of manufacturer's product information and installation instructions for each item and accessories.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's unopened containers, packages or bundles identified with manufacturer's name, brand, type, and grade clearly marked.

B. Store in dry areas and protect from dampness and deterioration.

C. Protect ready-mixed products from freezing.

D. Protect metal products from rusting.

E. Deliver fire-rated materials bearing testing agency label and required fire classification number.

1.05 PROJECT CONDITIONS

A. Do not install board products unless installation areas comply with minimum temperature and ventilation requirements recommended by manufacturer. As a minimum, provide temperatures above 50 degrees F. during and after installation.

B. Under slow drying conditions, allow additional drying time between coats of joint treatment.

C. Protect installed materials from drafts during hot, dry weather.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

C. Provide gypsum board materials manufactured by one of the following:

United States Gypsum (USG)
Pabco Gypsum
Georgia Pacific
National Gypsum Company

2.02 GYPSUM BOARD:

A. Standard: ASTM C1396 Type I; 5/8-inch thick, Type X with U.L. designation as required by U.L. listing, tapered edges, ends square cut, maximum permissible lengths

B. Water-resistant: 5/8-inch thick, Type X with U.L. designation as required by U.L. listing, tapered edges, ends square cut, maximum permissible lengths.

1. Water Resistant Board: Use type and thickness as required for U.L. Fire description but not less than 5/8-inch U.L. labeled “WRX” meeting ASTM C1396.

2. Joint Tape: SHEETROCK Joint Tape.

3. Setting Type Joint Compound: Easy Sand or DURABOND by USG.

C. 1-Hour Shaftwall: System U.L. Design U415. All components shall be by one manufacturer for unit responsibility.

1. 5/8-inch USG Firecode ‘C’, 1-inch USG Shaftwall liner labeled “SLX”.

2. Use USG ‘C-H’ or ‘E’ studs. Flanges holding 1-inch liner panel shall be continuous. No tab systems. Studs shall meet.

D. USG FIBEROCK® brand:

1. VHI panel, high-density cellulose wall panels, long edges tapered to form a shallow channel for joint reinforcement. Setting-type joint compound is required.

2. Panels to comply with ASTM D3273, C1629; Thickness: 5/8 inch, unless otherwise indicated.

E. GEORGIA-PACIFIC DENSSHIELD® brand:

1. Water-Resistant treated core covered front and back with acrylic coated high-density fiberglass mats.

2. Panels to comply with ASTM D3273, E96; Thickness: 5/8 inch, unless otherwise indicated.

F. GEORGIA-PACIFIC DENSGLASS®: Exterior Sheathing

1. Mold and Moisture Resistant Fiberglass Mats
2. Panels to comply with ASTM D3273 thickness ½” unless otherwise specified.

G. Impact Resistant Gypsum Board: Interior Sheathing

1. Georgia-Pacific – ToughRock®
2. National Gypsum – Hi-Abuse XP®
3. USG – Fiberock® Abuse-Resistant Panels

2.03 GYPSUM BOARD ACCESSORIES

A. Provide gypsum board accessories in accordance with GA-216, and as shown on drawings and specified.
B. Trims: Provide accessories such as corner beads and edge trim as metal fabrications. Plastic materials will not be acceptable.

1. Cornerbead: Use SHEETROCK paper faced metal outside corner, B1 XW EL.

2. L-Trim: Use SHEETROCK paper faced metal “L” trim, B4.

3. J-Trim: Use SHEETROCK paper faced metal “J” trim, B9.

4. Control Joint: Use No. 93, Amico

5. Bullnose Cornerbead: Use SHEETROCK paper faced metal 3/4-inch, or 1-1/2 inch (as selected by Architect). Bullnose outside corner.

C. Provide suspension system for applications of gypsum board using the components required by Drawings, and in accordance with ASTM C645, and Chapter 25, Title 24, California Building Code.

D. Fasteners: Corrosion resistant conforming to ASTM C1002.

1. Wood Studs: Minimum 1-1/4 inch, Type W, bugle head.
3. Metal Studs: Minimum Type S, bugle head.
4. Ceiling Furring: S-12, bugle head at 12 inches at all edges and supports.

E. Adhesive: Provide type manufactured by US Gypsum or other approved, appropriate for attaching board to dissimilar substrate materials shown on Drawings.

1. Gypsum board to gypsum board- Durabond or Easy Sand.

2. Gypsum board to coreboard, or sound deadening board- Durabond or Easy Sand.

3. Gypsum board to cementitious substrates- Durabond 90.

F. Hanger Wire: Provide No. 8 pre-straightened hanger wires.

G. Furring Channels: Provide 7/8-inch hat or Z-type furring channels fabricated from minimum 22 gage galvanized steel.

H. Joint Treatment:

1. Paper tape conforming to ASTM C475, or USG Heavy Duty.

2. Compound-powdered or ready-mixed conforming to ASTM C475. Taping and topping joint compound or all-purpose joint compound may be used.

I. Texturing:

1. Wall Texturing: Provide materials manufactured by one of the following:

Hamilton Drywall Products
USG
National Gypsum Co.

3. Ceiling Texturing: Provide materials manufactured by one of the following:

   Hamilton Drywall Products
   USG
   National Gypsum Co.

J. Shims: Provide for between studs and gypsum board for level and true wall plane.

5. Drywall Channel Screeds: Provide channel screeds and moldings by Fry Reglet Corp., as shown on the Drawings. Provide custom colors as selected by the Architect.

6. Acoustical Sealant: USG SHEETROCK Acoustical Sealant.

7. Drywall Primer: USG SHEETROCK 1st Coat.

8. Setting Compound: DURABOND or Easy Sand.

2.04 EXTERIOR WALL SHEATHING

A. Product: GEORGIA-PACIFIC DENSGLASS®: Exterior Sheathing

1. Mold and Moisture Resistant Fiberglass Mats.
2. Panels to comply with ASTM D3273 thickness 5/8".

2.05 ACCESS DOORS

A. In partitions and ceilings installed in accordance with this Section, provide doors where shown on the Drawings and where required for access to mechanical installations and electrical installations. Verify quantity, type and location with mechanical and electrical trades.

B. Types:

1. Refer to Specifications Section 10 20 00, and Division 23, Mechanical Sections, for types of access doors

2. For piercing fire-rated surfaces, provide access doors having the same fire rating as the surface being pierced.

3. For tile surfaces and toilet rooms, provide stainless steel access doors and frames, with satin finish.

4. For other installations, provide prime-coated steel access doors and frames for finish painting to be performed at the job listed under Section 09 90 00 of these Specifications.

2.06 DRYWALL REVEAL MOLDINGS

A. Drywall Channel Screeds: Provide channel screeds and moldings by Fry Reglet Corp., as shown on the Drawings. Provide custom colors as selected Architect.

1. 3/4-inch Model No. DRM-625-75 by Fry Reglet Corp.
2. 2-inch Model No. DRM-625-200 by Fry Reglet Corp.
3. 3-inch Model No. DCS-625-300 by Fry Reglet Corp.

2.07 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the acceptance of the Architect.

B. Metal Trim: The Drawings do not show all locations and requirements for metal trim. Carefully study the Drawings and the installation and provide all metal trim normally recommended by the manufacturer of the gypsum wall board accepted for use in this Work.

2.08 WALL SHEATHING

A. Cementitious Fiber-Mat Reinforced Sheathing: ASTM C1325, ANSI A118.9, Cementitious Backer.

1. Product: Subject to compliance with requirements, provide DUROCK® Brand Cement Board by Untied States Gypsum Company.

2. Type and Thickness: 5/8" inch thick.

3. Size: 48" by 96" inches.

2.09 FASTENERS FOR EXTERIOR WALL SHEATHING

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and application.

1. Wood Screws: 1-5/8” inch bugle headed #6 screw with corrosion-resistant coating. Corrosion resistance to comply with printed submittal literature.

2. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: 1-1/4” bugle headed #6 screws with corrosion resistant coating. Corrosion resistance to comply with printed submittal literature.

4. For Steel Framing less than 0.329 inch thick, attach sheathing to comply with ASTM C1002.

5. For Steel Framing from 0.033 to 0.112 inch thick, attach sheathing to comply with ASTM C954.

PART 3 - EXECUTION

3.01 PREPARATION

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

3.02 INSTALLATION

A. Install gypsum board in accordance with the Drawings and with the separate boards in moderate contact but not forced into place.

B. At internal and external corners, conceal the cut edges of the boards by the overlapping covered edges of the abutting boards.

C. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

D. Joints between wall and floor shall not exceed 1/8-inch. Where sound-rated drywall construction is indicated, seal construction at perimeters, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C919 and manufacturer's recommendation for location of edge trim, and close off sound-flanking paths around or through construction, including sealing of partitions above acoustical ceilings.

E. Ceilings: Install the gypsum wallboard to ceilings with the long dimension of the wallboard at right angles to the supporting members.

1. Wall board may be installed with the long dimension parallel to supporting members that are spaced 16 inches on centers when attachment members are provided at end joints.

F. Ceiling Suspension System: Carrying Channels shall be securely hung from the structure above, spaced as shown and noted on the Drawings, but in no case more than 4'-0" on center. Hanging wire shall be securely fastened to the structure above as detailed, as recommended by the manufacturer of the suspension system components and as required to meet all Building Code requirements. Installation shall conform to Division of the State Architect, IR 25.

1. Hanging wires shall be securely fastened to the carrying channels, saddle-tied by at least three turns around each channel, and shall be spaced as shown and noted on the Drawings, but in no case more than 4'-0" on center.

2. Channels shall be located within 6 inches of parallel walls and shall be cut short of abutting walls 1/2-inch, plus or minus 1/4-inch. Carrying channels shall be leveled with turnbuckles where required.

G. Furring Channels shall be securely fastened to carrying channels and shall be spaced 16 inches on center, unless shown otherwise on the Drawings. Furring channels shall be fastened to carrying channels with furring clips manufactured for this purpose.

H. Walls: Install the gypsum wallboard to studs at right angles to the furring or framing members.

1. Make end joints, where required, over framing or furring members.
2. Install gypsum wallboard over full height of all stud walls.

I. Attaching:

1. Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws 7” to 8” on center at ceilings and 16" on center at walls.

2. Where framing members are spaced 24 inches apart on walls, space screws 12" on center.

3. Attach double layers in accordance with the pertinent codes and the manufacturer's recommendations as accepted by the Architect.

4. Attach to wood as required by governmental agencies having jurisdiction.

J. Access Doors:

1. By careful coordination with the Drawings and with the trades involved, install the specified access doors (Section 10 00 00 and specifications in Division 23, Mechanical) where required.

2. Anchor firmly into position and align properly to achieve an installation flush with the finished surface.

3.03 JOINT TREATMENT

A. Inspect areas to be joint treated, verifying that the gypsum wall board fits snugly against supporting framework.

B. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees for 24 hours prior to commencing the treatment, and maintain temperature until joint finishing compounds have dried.

C. Apply the joint treatment and finishing compound by machine or hand tool.

D. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

E. Embedding Compounds:

1. Apply to gypsum wallboard and fastener heads in a thin uniform layer.

2. Spread the compound not less than 3 inches wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then spread a thin layer of compound over the tape.

3. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6 inches wide at joints, and feather edged.

4. Sandpaper between costs as required.

5. When thoroughly dry, sandpaper to eliminate ridges and high points.

F. Finishing Compounds:

1. After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to joints and fastener heads.

2. Feather the finishing compound to not less than 12 inches wide.

3. When thoroughly dry, sandpaper to obtain a uniformly smooth surface, taking care not to scuff the paper surface of the wallboard.

4. Texture finish walls and ceilings to be painted. Submit a sample to the Architect for acceptance.

3.04 CORNER TREATMENT

A. Internal Corners: Treat as specified for joints, except fold the reinforcing tape lengthwise through the middle and fit neatly into the corner.

B. External Corners:

1. Install the specified corner bead, fitting neatly over the corner and securing with the same type fasteners used for installing the wallboard.
2. Space the fasteners approximately 6 inches on centers, and drive through the wallboard into the framing or furring member.

3. After the corner bead has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8 inches to 10 inches on each side of the corner.

3.05 CLEANUP

A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum wallboard scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.

B. At completion of each segment of installation in a room or space, promptly pick-up and remove from the working area all scrap, debris, and surplus material of this Section.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes: Provide materials, labor and equipment necessary for the completion of a completely painted project, including preparation of painted surfaces. Provide finishes based on materials and products scheduled in these specifications and on the drawings. If not otherwise specified, provide prime coat and two finish coats on all exposed to view or weather surfaces. This shall include painting all pigmented exterior plaster (integral color stucco) in not less than three colors. The following miscellaneous items shall also be painted:

1. Areas shown to be painted on the Room Finish Schedule or Exterior and Interior Elevations. Items called out to be painted in Divisions 23 and Division 26. All hollow metal.

2. Exposed site plumbing items, such as PIV's, backflow preventors, exposed pipes and standpipes, fire hydrants, irrigation air relief valve covers, exposed valves, exposed roof drainpipes, etc.

3. Exposed interior mechanical ductwork, piping, and electrical conduits (except in electrical rooms and closets), wall and ceiling access covers, hatches, panel covers, and plates, and exposed cable tray and supports. **Roof top mechanical units that are above the height of the roof parapet, paint to match exterior plaster.**

4. Priming and sealing of gypsum wallboard that is to receive vinyl wall covering.

5. Roof hatches (interior and exterior), exterior galvanized ladders, sheet metal parapet copings on both sides and top. Exposed metal components that arrive on job with only prime finish. Signposts. Decorative metal fence and gates. Metal railings and bollards. Exposed steel connectors, bolts, and plates.

6. Stain and seal exposed wood components.

B. Specific items NOT to be painted or finished: Factory finished items (as opposed to factory primed), chain link fence, volleyball and basketball posts, football goals, chin-up bars, concrete benches, wood casework finished by casework fabricator.

C. Related Work:

1. Section 07 92 00 – Joint Sealants.
2. Section 09 29 00 – Gypsum Board.
3. Mechanical, Division 23.

1.02 REFERENCE STANDARDS

A. Conform to California Air Resources Board (CARB) Rules, especially 1113, Architectural Coatings.

B. Title 19, California Code of Regulations (CCR), Public Safety, State Fire Marshal Regulations

1.03 SUBMITTALS

A. Prepare eight, 8-1/2-inch by 11-inch samples of finishes, to be provided to District's Maintenance and Operations Department. When possible, apply finishes on identical type materials to which they will be applied on job.

B. Identify each sample as to finish formula, color name, reflectance number and sheen name and gloss units.

C. Colors will be selected by Owner and Architect prior to commencement of work, from manufacturer's full range of standard and custom colors.

D. State Fire Marshal, Fire and Life Safety Approval: Flame retardant coatings shall be listed by the California State Fire Marshal's office. A copy of this listing and a material specification sheet shall accompany the submittal.

E. Submittal to be reviewed and signed by District's Maintenance and Operations Department prior to Architects approval.

1.04 QUALITY ASSURANCE

A. Mock-up: Before proceeding with paint application, finish one complete surface of each color scheme required, clearly indicating selected colors, finish texture, materials and workmanship. If approved, sample area will serve as a minimum standard for work throughout.

1.05 MAINTENANCE MATERIALS

A. Leave on premises where directed, not less than one full gallon of each color, of each type of paint, in new unopened containers. Label each container for identification.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver paint materials in sealed original labeled containers bearing manufacturer's name, type of paint, brand name, solids content, color designation and instructions for mixing and/or reducing.

B. Provide adequate storage facilities. Store paint materials at a minimum ambient temperature of 65 degrees F., in well ventilated area.

C. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.07 PROJECT CONDITIONS

A. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture contents of surfaces are below following minimums: gypsum board - 12 percent; cementitious materials - 12 percent.

B. Ensure surface temperatures and surrounding temperatures are above 50 degrees F., before applying finishes.

C. Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures above 50 degrees F., for 24 hours before, during, and 48 hours after application of finishes.

D. During painting, provide minimum of 25-foot candles of lighting on surfaces to be painted.

1.08 EQUAL PRODUCTS

A. All products specified herein, may be substituted with a product that is equal to better than the product specified. Products must be equal in all ways, including chemical and physical make up, as well as performance.

B. Substitutions will be reviewed by the District and a determination will be made on the acceptability of the product submitted. If a determination is made that the substituted product is not equal, the original project specified herein will be provided at no cost to the owner.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and coatings manufactured by one of the following companies noted in Section 2.02, D and referrer to cross-reference guide for acceptable alternates.

2.02 PAINT MATERIALS

A. Accessories: Provide linseed oil, turpentine and other materials not specifically specified but required to achieve finishes.

B. Paints and Coatings: Provide ready-mixed type except field catalyzed coatings; pigments fully ground maintaining soft paste consistency, capable of being readily and uniformly dispersed to complete homogeneous mixtures.

C. Provide paints and coatings with good flowing and brushing properties and capable of drying or curing free of streaks and sags.

D. **Painting**
Provide equivalent paint types according to the following schedule.

Interior

New Drywall (Semi-Gloss Finish)

1st coat	SW ProMar 200 Zero VOC Primer
2nd coat	SW ProMar 200 Zero VOC Semi-Gloss
3rd coat (to cover*)	SW ProMar 200 Zero VOC Semi-Gloss

New Drywall (Low Sheen Finish)

1st coat	SW ProMar 200 Zero VOC Primer
2nd coat	SW ProMar 200 Zero VOC Low-Sheen
3rd coat (to cover*)	SW ProMar 200 Zero VOC Low-Sheen

New Drywall (Eggshell Finish)

1st coat	SW ProMar 200 Zero VOC Primer
2nd coat	SW ProMar 200 Zero VOC Eg-shel
3rd coat (to cover*)	SW ProMar 200 Zero VOC Eg-shel

New Drywall (Microbicidal Eggshell Finish – Locker Rooms, Nurses Office)

1st coat	SW ProMar 200 Zero VOC Primer
2nd coat	SW Paint Shield Microbicidal Eg-shel
3rd coat (to cover*)	SW Paint Shield Microbicidal Eg-shel

New Wood Painted Surfaces (Semi-Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

New Steel Door / Door and Window Frames

1st step	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Prime
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

New Ferrous Metal (including steel doors and hollow metal frames)

Pretreatment	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Prime
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

New Galvanized Metal

Pretreatment	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Prime
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

Ceilings

1st coat	SW ProIndustrial WB Dryfall Flat
2nd coat (to cover*)	SW ProIndustrial WB Dryfall Flat

Previously Painted Drywall and Wood “Wall” Surfaces (Semi-Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProMar 200 Zero VOC Semi-Gloss
3rd coat (to cover*)	SW ProMar 200 Zero VOC Semi-Gloss

Previously Painted Drywall and Wood “Wall” Surfaces (Low Sheen Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProMar 200 Zero VOC Low-Sheen
3rd coat (to cover*)	SW ProMar 200 Zero VOC Low-Sheen

Previously Painted Drywall and Wood “Wall” Surfaces – Locker Rooms, Nurses Office, Eggshell Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW Paint Shield Microbicidal Eg-shel
3rd coat (to cover*)	SW Paint Shield Microbicidal Eg-shel

Previously Painted Wood Trim Surfaces (Semi-Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

Previously Painted Wood Trim Surfaces (Low Sheen Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Low Sheen
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Low-Sheen

Previously Painted Metal Surfaces (Semi-Gloss Finish)

1st coat (spot)	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

Previously Painted Metal Surfaces (Low Sheen Finish)

1st coat (spot)	SW ProCryl Acrylic Metal Prime
2nd coat	SW ProIndustrial WB Alkyd Urethane Low-Sheen
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Low-Sheen

Vinyl Covered Walls

1st coat	SW Extreme Bonding Primer
2nd coat	SW ProMar 200 Zero VOCSemi-Gloss
3rd coat (to cover*)	SW ProMar 200 Zero VOC Semi-Gloss

Exterior

New Painted Stucco-Plaster-Concrete (Low Sheen Finish)

1st coat	SW Loxon Primer
2nd coat	SW A-100 Satin
3rd coat (to cover*)	SW A-100 Satin

New Painted Wood (Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

New Painted Wood (Semi-Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

New Painted Wood (Low Sheen Finish)

1st coat	SW Preprite ProBlock Urethane
2nd coat	SW A-100 Satin
3rd coat (to cover*)	SW A-100 Satin

Previously Painted Stucco-Plaster-Concrete (Low Sheen Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW A-100 Satin
3rd coat (to cover*)	SW A-100 Satin

Previously Painted Wood (Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

Previously Painted Wood (Semi-Gloss Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Semi-Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Semi-Gloss

Previously Painted Wood (Low Sheen Finish)

1st coat	SW Preprite ProBlock Primer
2nd coat	SW A-100 Satin
3rd coat (to cover*)	SW A-100 Satin

New Steel Doors / Door and Window Frames

1st step	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

New Ferrous Metal

1st step	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

New Galvanized Metal

Pretreatment	GLL Clean & Etch
1st coat	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

Previously Painted Steel Doors / Door and Window Frames

1st coat	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

Previously Painted Ferrous Metal

1st coat	SW ProCryl Acrylic Metal Primer
2ndcoat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

Previously Painted Galvanized Metal

1st coat	SW ProCryl Acrylic Metal Primer
2nd coat	SW ProIndustrial WB Alkyd Urethane Gloss
3rd coat (to cover*)	SW ProIndustrial WB Alkyd Urethane Gloss

E. **SPECIAL COATINGS (HIGH PERFORMANCE) –** Exterior metal stairs (including handrails, railings and guard rails), roof sheet metal flashing, roof equipment, metal wall louvers and other metal surfaces requiring High Performance Coatings.

Unprimed or shop primed ferrous metal

1st coat	SW Macropoxy 646
2nd coat	SW Macropoxy 646
3rd coat (to cover*)	SW High Solids Polyurethane

Galvanized or Aluminum

1st coat	SW DTM Wash Primer
2nd coat	SW Macropoxy 646
3rd coat (to cover*)	SW High Solids Polyurethane

Previously Painted Metal

1st coat	SW Macropoxy 646
2nd coat	SW Macropoxy 646
3rd coat (to cover*)	SW High Solids Polyurethane

F. **Other** – Wood, metal and concrete steps and ramps attached to buildings indicated will be painted as follows:

Concrete Steps/Ramps

1st coat	SW Armorseal 8100
2nd coat (to cover*)	SW Armorseal 8100 w/ sand
3rd coat	Include yellow stripes

Metal Steps/Ramps

1st coat	SW Macropoxy 646
2nd coat	SW Macropoxy 646
3rd coat (to cover*)	SW High Solids Polyurethane w/ sand
4th coat	Include yellow stripes

Wood Steps/Ramps

1st coat	SW Superdeck 3100 Deck & Dock Elastomeric Coating
2nd coat	SW Superdeck 3100 Deck & Dock Elastomeric Coating *(6310 Anti-Skid added to 2nd coat)* Include yellow stripes

*"to cover" is defined – coverage must meet district's approval
**"spot prime" is defined as priming all bare metal areas

G. **Fire Retardant Coating**: Must meet UBC No. 42-1. UL No. 723, ANSI - 2.5, NFPA 255, State Fire Marshal #C-10000, and ICBO No. 3656.

1. Flamort Flam-Gard clear fire-retardant varnish flame spread less than 75, a clear intumescent fire-protective interior varnish for natural wood finishes. Apply two coats, base coat, 8 gallons per coat per 1000 square feet and one coat, finish coat, 2-1/2 gallons per 1000 square feet. As manufactured by Flamort Company.

2. GLIDDEN: Contact Flame Control Coatings (see attached information).

3. Dunn-Edwards Corp.

4. Frazee Paint Co.

   Note: Provide 12" x 12" samples of each of the systems listed in AD. Fire Retardant Coating above, and Architect will select system to be used, based on finish achieved.

5. Vista Paint: Clear or Fire-Retardant Intumescent Paint. For use on exterior wood surfaces requiring weather protection. Clear product is used over interior surfaces on wood and paneling where natural finish is required.

H. **Anti-Graffiti Coating**

1. Preferred Product: Surpro HDWB: by Surtec, Inc., Surface Technology, 1880 N. MacArthur Drive, Tracy, CA 95376, Phone: (209) 820-3700.

2. VandlGuard™: by Rainguard International, 1079 Culpepper Drive, Conyers, GA, 30094, Phone: 949-675-2811

I. **Paint Guide**

SURFACES	FRAZEE
Interior	126 Aro-Thane S/G
Interior	129 Aro-Thane L/S
Interior	022 LoGlo
Exterior	215 Royal Supreme
Exterior	146 Aro-Thane Gloss
Exterior	136 Aro-Thane S/G

J. **Primer Guide**

SURFACES	FRAZEE
Interior – New Gypsum Board	Zinsser 123 Primer/Sealer
Interior – New Wood	Zinsser 123 Primer/Sealer
Interior – New Metal Surfaces	C309 Universal Metal Primer
Interior – Previously Painted Gyp Board, Wood	Zinsser 123 Primer/Sealer
Interior – Previously Painted	Zinsser 123 Primer/Sealer

Plaster, Metal	
Exterior – New and Previously Painted Wood	Zinsser 123 Primer/Sealer
Exterior – New and Previously Painted Stucco, Concrete, and Plaster	Zinsser 123 Primer/Sealer
Exterior – New and Previously Painted Metal	Zinsser 123 Primer/Sealer

PART 3 - EXECUTION

3.01 EXAMINATION

A. Thoroughly examine surfaces scheduled to be painted prior to commencement of work. Report in writing of conditions potentially detrimental to proper application. Do not commence until satisfied that defects and deficiencies in surfaces have been rectified.

3.02 PROTECTION

A. Adequately protect other surfaces from paint and damages. Repair damages as a result of inadequate or unsuitable protection.

B. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted and in particular, surfaces within storage and preparation areas.

C. Place cotton waste cloths and materials which may constitute a fire hazard in closed metal containers and remove daily from site.

D. Remove or cause to have removed, electrical plates, fittings, fastenings, escutcheons, and hardware prior to painting operations. These items are to be carefully stored, cleaned and replaced on completion of work in each area. Do not use solvents or other harsh cleansers on surfaces which could be damaged by such use of materials.

3.03 PREPARATION OF SURFACES

A. Thoroughly clean surfaces to be painted with hydro-cleaning process to remove chalk, dirt and other deleterious materials where such cleaning methods are practical. Spot prime before application of finish coats.

B. Remove dirt, grease and oil from canvas and cotton covered insulated materials such as pipes and ducts.

C. On surfaces to be cleaned which cannot be hydro cleaned, where possible, wash with solution of TSP and thoroughly rinse.

D. Patch and prime cementitious materials.

E. Remove contamination from gypsum board surfaces and prime to conceal defects. Paint after defects have been remedied.

F. Remove surface contamination and oils from zinc coated/galvanized surfaces, wash with solvent, apply etching primer or as recommended by paint manufacturer and confirmed with metal manufacturer.

G. Remove dirt, loose scale, powder, mortar and other foreign matter from cementitious

surfaces which are to be painted or to receive sealer. Remove oil and grease with TSP solution, rinse well and allow to thoroughly dry.

H. Remove stains from cementitious surfaces caused by weathering of corroding materials with a solution of sodium metasilicate after being thoroughly wetted with water. Allow to thoroughly dry.

I. Fill hairline cracks, small holes and imperfections. Smooth off to match adjacent surfaces. Smooth off to match adjacent surfaces. Wash and neutralize high alkali where they occur.

J. Remove grease, rust, scale, dirt and dust from steel and iron surfaces. Where heavy coatings of scale are evident, remove by wire brushing, sandblasting or other method necessary, practical and in accordance with Steel Structures Painting Council.

K. Clean non-primed steel surfaces by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring welded joints, bolts and nuts are similarly cleaned. Prime surfaces to indicate defects. Paint after defects have been remedied.

L. Sand and scrape shop primed steel surfaces to remove loose primer, and rust. Feather out edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare surfaces.

M. Wipe off sanding dust and grit from miscellaneous wood and carpentry items prior to priming. Spot coat knots, pitch steaks and sappy sections with sealer. Fill nail holes and cracks after primer has dried and sand between coats. Back prime interior and exterior woodwork.

N. Doors:

1. Painting Contractor shall not remove or reinstall any door hardware.

2. Except for door hinges, painting of doors must be completed prior to installation of hardware.

3.04 APPLICATIONS

A. Apply each coat at proper consistency.

B. Each coat of paint is to be slightly darker than preceding coat unless otherwise directed, or finish is clear.

C. Sand lightly between coats to achieve required finish.

D. Do not apply finishes on surfaces that are not sufficiently dry.

E. Allow each coat to dry before following coats are applied.

F. Backprime wood which is to receive paint or enamel paint, with enamel undercoater paint.

G. Prime top and bottom edges of wood doors with enamel undercoater when they are to be painted.

H. Apply flame retardant coating to the wood surface prior to applying stain and/or paint per manufacturer's instructions. Furnish certification of application of flame-retardant coating.

3.05 MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to mechanical and electrical sections of these specifications, as well as Drawings,

with respect to painting and finishing requirements, color coding, identification banding of equipment, ductwork, piping and conduit.

B. Remove grilles, covers and access panels for mechanical and electrical systems from location and paint separately.

C. Finish paint primed equipment to colors selected.

D. Prime and paint insulated and bare pipes, conduits, boxes, insulated and bare ducts, hangers, brackets, collars and supports, except where items are plated or covered with a pre-finished coating, or are not exposed-to-view.

E. Replace identification markings on mechanical and electrical equipment when painted over or spattered.

F. Paint interior surfaces of air ducts, convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to limit of sightline. Paint dampers exposed immediately behind louvers, grilles, convector and baseboard cabinets to match face panels, as applicable.

G. Paint both sides and edges of plywood backboards for electrical equipment before installing backboards and mounting equipment on them.

H. Color code equipment, piping, conduit, and exposed ductwork of mechanical and electrical work. Color banding and identification shall include flow arrows, naming, numbering, stenciling, etc.

3.06 CLEANING

A. As work progresses and upon completion, promptly remove paint where spilled, splashed, smeared and splattered.

B. During progress of work, keep premises free from unnecessary accumulations of tools, equipment, surplus materials and debris.

C. Upon completion of work, leave premises neat and clean, to satisfaction of Owner.

END OF SECTION

11 00 00

EQUIPMENT

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 11 40 00

FOODSERVICE EQUIPMENT

PART 1 - GENERAL

1.1 SCOPE

A. The work referred to in this section consists of furnishing all labor and material required to provide and deliver all equipment hereinafter specified into the building. Specified equipment must be supplied per specifications without substitution. If “or equal” is adjacent to model number substitutions may be accepted if all criteria of specified brand is met or exceeded. If the alternate model is not approved by the Owner for any reason the specified item must be supplied at no additional cost. Un-crate, assemble, hang, set in place, level, and completely install all equipment, exclusive of final utility connections. Final utility connections to all equipment, shall be part of the work under additional appropriate sections of the work and not part of the food service work.

B. Coordinate Owner and Vendor-supplied equipment noted on the drawings or in the specifications as NIKEC. Show on roughing in Plans and sizes, utilities, and other requirements as furnished in the Specifications, by Owner or appropriate supplier in submittals as if the equipment is contractor furnished.

C. Field measurements shall be made prior to installation of any equipment item.

D. The cutting of holes in equipment for pipe, drains, electrical outlets, etc., required for this installation, shall be part of this work. Work shall conform to the highest standards of workmanship and shall include welded sleeves, collars, ferrules and escutcheons.

E. Repair of all damage to the premises as a result of the equipment installation as well as the removal of all debris left by the work of this section.

F. Food service equipment and fixtures shall be cleaned and ready for operation at the time the facility is turned over to the Owner for final inspection by the Owner’s Representative.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Division 1 Section “Product Requirements”. Conditions for acceptance of products by manufacturers and for substitutions. Unless specifically noted, no substitutions will be considered
2. Division 1 Section 01 78 00 / 1.05 “Warranties and Guarantees”.
3. Division 5 Section 05 50 00 "Metal Fabrications" for equipment supports.
4. Division 6 Section 06 41 00 “Architectural Wood Casework” for wood casework and plastic-laminate substrates.
5. Divisions 22 Section 22 05 29 “Hangers and Supports for Plumbing Piping and Equipment” and Division 23 Section 23 05 29 “Hangers and Supports for HVAC Equipment”. General requirements for supports and anchors for pipe and duct systems associated with food service equipment.
6. Refer to Division 23 “Heating, Ventilation, and Air Conditioning (HVAC)” for service roughing-ins; drain traps; atmospheric vents; valves, pipes, and fittings; and other materials required to complete food service equipment installation.

7. Division 26 Section “Electrical” for wiring, disconnects, and general requirements and other electrical materials required in addition to those specified, as applicable to electrical work associated with food service equipment.

C. All electric services including wiring to, and final connections to, the fixtures except, as specified differently in the specifications, drawings, or herein.

D. All water and waste services to the fixtures including shut-off valves, trim, traps, etc., and final connections to the fixtures, except as specified differently in the specifications, drawings, or herein.

E. Floors, quarry tile, concrete bases, walls, ceilings, finishes and related building work, except as specified differently in the specifications, drawings or herein.

1.3 DEFINITIONS

A. Terminology Standard: Refer to NSF 2, "Food Equipment" or other applicable NSF standards for definitions of food service equipment and installation terms not otherwise defined in this Section or in other referenced standards.

B. OFOI: Owner Furnished Owner Installed Equipment. Where indicated, Owner will furnish and install equipment items.

C. OFCI: Owner Furnished Contractor Installed Equipment. Where indicated, Owner will furnish equipment to be installed by Contractor.

D. CFCI: Contractor Furnished Contractor Installed Equipment.

E. NIKEC: Not Included in Kitchen Equipment Contract.

F. KEC: Kitchen Equipment Contractor

1.4 SUBMITTALS

A. Product Data: For each type of food service equipment indicated. Include manufacturer's specification and cut sheet with model number etc. and cover page indicating utility etc., and accessories and requirements for access and maintenance clearances, water and drainage, power or fuel, and service-connections including roughing-in dimensions.

B. Shop Drawings: For food service equipment not manufactured as standard production and catalog items by manufacturers. Include plans, elevations, sections, roughing-in dimensions, fabrication details, service requirements, and attachments to other work.

1. Wiring Diagrams: Details of wiring for power, signal, and control systems and differentiating between manufacturer-installed and field-installed wiring.
2. Piping Diagrams: Details of piping systems and differentiating between manufacturer-installed and field-installed piping.

C. Coordination Drawings: For locations of food service equipment and service utilities. Key equipment with item numbers and descriptions indicated in Contract Documents. Include plans and elevations of equipment, access- and maintenance-clearance requirements, details of concrete or masonry bases and floor depressions, and service-utility characteristics.

D. Contract Document Drawings:

1. Drawings furnished, constitute a part of these specifications show locations of equipment and general arrangement of mechanical and electrical services. Necessary deviation from the illustrated arrangements to meet structural conditions, shall be considered a part of the work of this section. Such deviations shall be made without expense to the Owner.
2. The drawings are for the assistance and guidance of the Food Service Equipment Contractor. Exact locations shall be governed by the building configuration. The Food Service Equipment Contractor shall accept his contract with this understanding.
3. Should there be a conflict between the drawings and the specifications, the specifications shall govern. Upon discovery, all errors, omissions, conflicts, and ambiguities are to be submitted to the Architect via formal RFI for clarification and resolution. A clarification memo or addendum will be issued, if required. If no RFI is submitted, the Contractor shall assume responsibility for that which places the greatest burden upon the Contractor. No allowances will be made in favor of the Contractor for errors, omissions, conflicts, or ambiguities reported after award of contract.

E. Utility Roughing-in Drawings:

1. The Food Service Equipment Contractor shall prepare and submit one bond or a valid print, of all roughing-in drawings, showing information necessary for the roughing-in of refrigerant lines, syrup/beer lines, plumbing, steam, mechanical and electrical utility requirements. Drawings shall also include construction requirements necessary for all equipment including floor depressions, raised bases, wall blocking, wall recesses and any critical dimensions for specific equipment requirements. Approval will be made upon one print which will be returned to the Food Service Equipment Contractor for reproduction purposes. Drawings not properly submitted in this format, will not be reviewed. Drawings without an ”Approved” or an “ Approved as Noted” stamp, will not be reviewed. Drawings without an” Approved as noted” stamp, will not be considered an authorized shop drawing and will not be allowed on the job site.

   a Furnished four (4) sets “Approved” and/or “Approved as Noted” shop drawings, for distribution to the field, as directed.

F. Shop Fabrication Drawings: The Food Service Equipment Contractor shall prepare and submit one bond or original print, of all shop drawings, showing all information necessary for fabrication and installation of the work of this section. Approval will be made upon one print which will be returned to the Food Service Equipment Contractor for reproduction purposes. Drawings not properly submitted in this format, will not be reviewed. Drawings without an “Approved” or an “Approved as Noted” stamp, will not be considered an authorized shop drawing and will not be allowed on the job site.

G. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for exposed products with color finishes.

H. Samples for Verification: Of each type of exposed finish required, minimum 4-inch- (100-mm-) square or 6-inch-(150-mm-) long sections of linear shapes and of same thickness and material indicated for work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

I. Product Certificates: Signed by manufacturers of refrigeration systems or their authorized agents certifying that systems furnished comply with requirements and will maintain operating temperatures indicated in the areas or equipment that they will serve.

J. Maintenance Data: Operation, maintenance, and parts data for food service equipment to include in the maintenance manuals specified in Division 1. Include a product schedule as follows:

1. Product Schedule: For each food service equipment item, include item number and description indicated in Contract Documents, manufacturer's name and model number, and authorized service agencies' addresses and telephone numbers.

1.5 QUALITY ASSURANCE

A. Kitchen Equipment Contractor Qualifications: Kitchen Equipment Contractor (KEC) to be licensed by state regulating board and shall have completed no fewer than five (5) Food Service Installations similar in material, design, and extent to that indicated for this Project, which have resulted in satisfactory in-service performance.

B. Fabricator Qualifications: Fabricators shall have been regularly engaged in the manufacture of Food Service Equipment of the types, capacities, and sizes required, whose products have been in satisfactory use in similar service for no fewer than five (5) years.

C. Source Limitations: Obtain each type of food service equipment through one source from a single manufacturer.

D. Product Options: Drawings indicate food service equipment based on the specific products indicated. Other manufacturers' equipment with equal size and performance characteristics may be considered. Refer to Division 1 Section 01 25 00 "Substitution Procedures."

E. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section 01 30 00 " Administrative Requirements" for all required project meetings. Review methods and procedures related to food service equipment including, but not limited to, the following:

1. Review access requirements for equipment delivery.
2. Review equipment storage and security requirements.
3. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
4. Review structural loading limitations.
5. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

F. All equipment shall be provided new, in unused condition, and of the latest manufacturer's model, unless otherwise specified. If the model specifications vary significantly from the item specified, provide equipment submittal for review and approval for installation.

1.6 CODES AND REGULATIONS

A. All work shall be in strict conformance with all federal, state, local codes, laws, regulations, and rules of agencies/authorities having jurisdiction.

B. All work under this section shall comply, as applicable, with:

1. National Fire Protection Association Standard(NFPA), including NFPA 70.
2. National Sanitation Foundation (NSF), including NSF-7. Provide equipment that bears NSF Certification Mark.
3. Provide electric and fuel-burning equipment and components that are evaluated by a Nationally Recognized Testing Laboratory (NRTL, ie: UL or ETL) for fire, electric shock, and casualty hazards according to applicable safety standards, ant that are certified for compliance and labeled for intended use.
4. National Electric Manufacturer's Association (NEMA)
5. American Society of Mechanical Engineers must carry the (ASME) stamp. Fabricate and label steam-generating and closed steam-heating equipment to comply with ASME Boiler and Pressure Vessel Code.
6. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Provide mechanical refrigeration systems complying with the American Society of Heating, Refrigerating and Air-Conditioning Engineers' ASHRAE 15, "Safety Code for Mechanical Refrigeration".
7. California Building Code (CBC).

8. American National Standards Institute (ANSI). Comply with applicable 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.
9. Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

    a Where applicable, fabricate food service equipment to comply with SMACNA “Kitchen Equipment Fabrication Guidelines”, unless otherwise indicated.

10. Listing and Labeling: Provide electrically operated equipment or components specified in this Section that are listed and labeled.

    a The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
    b Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

C. The Kitchen Equipment Contractor shall certify that all work and materials comply with Federal, State and Local laws, ordinances, and regulations, and is confirmed by the local inspector having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver Food Service 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 Food Service 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 Food Service Equipment carefully to avoid damage to components, enclosures, and finish. Do not install damaged Food Service Equipment. Replace and return damaged components to the Manufacturer.

D. Owner Furnished Equipment: The General Contractor will receive, accept and store the Owner Furnished Equipment until installation. The General Contractor shall assume responsibility for the equipment and its condition upon receipt of the equipment by him or his representative.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions of food service equipment installation areas by field measurements before equipment fabrication and indicate measurements on Shop Drawings and Coordination Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish required dimensions and proceed with fabricating equipment without field measurements. Coordinate construction to ensure actual dimensions correspond to established dimensions.

1.9 COORDINATION

A. Coordinate equipment layout and installation with other work, including light fixtures, and casework.

B. Coordinate location and requirements of service-utility connections.

C. Coordinate size, location, and requirements of concrete bases, positive slopes to drains, floor depressions, and insulated floors. Concrete, reinforcement, and formwork requirements are specified in Division 3 Section 03 30 00 "Cast-in-Place Concrete."

D. Coordinate installation of roof curbs, equipment supports, and roof penetrations.

1.10 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents. Warranty period: minimum 1 year from date of completion. Refer to Division 1 Section 01 78 00 / 1.05 “Warranties and Guarantees” for additional requirements.

B. Refrigeration Compressor Warranty: 5 years from date of completion. Submit a written warranty signed by manufacturer agreeing to repair or replace compressors that fail in materials or workmanship within the specified warranty period.

C. Not included in warranty:

1. Breakage – Due to negligence
2. Faulty operation

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless-Steel Sheet, Strip, Plate, and Flat Bar. ASTM A 666, Type 304, stretcher leveled, and in finish specified in “Stainless Steel Finishes” Article.

B. Stainless-Steel Tube: ASTM A 554, Grade MT-304, and in finish specified in “Stainless-Steel Finishes” Article.

C. Zinc-Coated Steel Sheet: ASTM A 653, G115 (ASTM A 653M, Z350) coating designation; commercial quality; cold rolled; stretcher leveled; and chemically treated.

D. Zinc-Coated Steel Shapes: ASTM A 36 (ASTM A 36M), zinc-coated according to ASTM A 123 requirements.

E. Sealant: ASTM C 920; Type S, Grade NS, Class 25, Use NT. Provide elastomeric sealant NSF certified for end-use application indicated. Provide sealant that, when cured and washed, meets requirements of Food and Drug Administration's 21 CFR, Section 177.2600 for use in areas that come in contact with food.

1. Color: As selected by Architect from manufacturer's full range of colors.
2. Backer Rod: Closed-cell polyethylene, in diameter larger than joint width.

F. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent), Class 1 (clear), Quality q3 (glazing select). Provide products complying with ANSI Z97.1, manufactured by horizontal (roller-hearth) process, and 6 mm thick, unless otherwise indicated. Provide exposed safety edges, if any, seamed before tempering.

G. Plastic: Except for plastic laminate, provide plastic materials and components complying with NSF 51.

H. Sound Dampening: NSF-certified, nonabsorbent, hard-drying, sound-deadening coating. Provide coating compounded for permanent adhesion to metal in 1/8-inch (3-mm) thickness that does not chip, flake, or blister.

I. Gaskets: NSF certified for end-use application indicated; of resilient rubber, neoprene, or PVC that is nontoxic, stable, odorless, nonabsorbent, and unaffected by exposure to foods and cleaning compounds.

2.2 ACCESSORIES

A. Cabinet Hardware: Provide NSF-certified, stainless-steel hardware for equipment items as indicated.

B. Casters: NSF-certified, standard-duty, stainless-steel, swivel stem casters with 5-inch- (125-mm-) diameter wheels, polyurethane tires with 1-inch (25-mm) tread width, and 200-lb (90-kg) load capacity per caster. Provide brakes on 2 casters per unit, minimum.

2.3 FABRICATION, GENERAL

A. Fabricate food service equipment according to NSF 2 requirements. Factory assemble equipment to greatest extent possible.

B. Welding: Use welding rod of same composition as metal being welded. Use methods that minimize distortion and develop strength and corrosion resistance of base metal. Provide ductile welds free of mechanical imperfections such as gas holes, pits, or cracks.

1. Welded Butt Joints: Provide full-penetration welds for full-joint length. Make joints flat, continuous, and homogenous with sheet metal without relying on straps under seams, filling in with solder, or spot welding.
2. Grind exposed welded joints flush with adjoining material and polish to match adjoining surfaces.
3. Where fasteners are welded to underside of equipment, finish reverse side of weld smooth and un-depressed.
4. Coat unexposed stainless-steel welded joints with suitable metallic-based paint to prevent corrosion.
5. After zinc-coated steel is welded, clean welds and abraded areas and apply SSPC-Paint 20, high-zinc-dust-content, galvanizing repair paint to comply with ASTM A 780.

C. Fabricate field-assembled equipment prepared for field-joining methods indicated. For metal butt joints, comply with referenced SMACNA standard, unless otherwise indicated.

D. Where stainless steel is joined to a dissimilar metal, use stainless-steel welding material or fastening devices.

E. Form metal with break bends that are not flaky, scaly, or cracked in appearance; where breaks mar uniform surface appearance of material, remove marks by grinding, polishing, and finishing.

F. Sheared Metal Edges: Finish free of burrs, fins, and irregular projections.

G. Provide surfaces in food zone, as defined in NSF 2, free from exposed fasteners.

H. Cap exposed fastener threads, including those inside cabinets, with stainless-steel lock washers and stainless-steel cap (acorn) nuts.

I. Provide pipe slots on equipment with turned-up edges and sized to accommodate service and utility lines and mechanical connections.

J. Provide enclosures, including panels, housings, and skirts, to conceal service lines, operating components, and mechanical and electrical devices including those inside cabinets, unless otherwise indicated.

2.4 STAINLESS-STEEL EQUIPMENT: for all parts of custom tables, tops, benches, sinks, cabinets, etc., as drawn or as specified, shall be AICI type 304 (18-8 Austenitic). All gauges called for shall be U.S. Standard Gauges. "S/S" or "S.S.", as shown in the drawings or specifications, shall indicate stainless steel.

A. Edges and Backsplashes: Provide equipment edges and backsplashes indicated complying with referenced SMACNA standard, unless otherwise indicated.

B. Apply sound dampening to underside of metal work surfaces, including sinks and similar units. Provide coating with smooth surface and hold coating 1 inch (25 mm) back from open edges for cleaning.

C. Tables: Fabricate with reinforced tops, legs, and reinforced undershelves or cross bracing to comply with referenced SMACNA standard, unless otherwise indicated, and as follows:

1. Tops: Minimum 0.0781-inch- (1.984-mm-) thick stainless steel, unless otherwise indicated.
2. Legs: 1-5/8 inch (41.3 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel with stainless-steel gusset and adjustable insert bullet-type feet with minimum adjustment of 1 inch (25 mm) up or down without exposing threads, unless otherwise indicated.
3. Undershelves: Minimum 0.625-inch- (1.588-mm-) thick stainless steel, unless otherwise indicated.
4. Top and Undershelf Reinforcement: Provide minimum 0.0781-inch- (1.984-mm-) thick, stainless-steel reinforcing, unless otherwise indicated.
5. Cross Bracing: 1-1/4 inch (31.75 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel, unless otherwise indicated.

D. Base Cabinets: Fabricate with reinforced tops, bases, and reinforced undershelves to comply with referenced SMACNA standard, unless otherwise indicated, and as follows:

1. Bodies: Minimum 0.0500-inch (1.27-mm) thick stainless steel, unless otherwise indicated.
2. Tops: Minimum 0.0781-inch (1.984-mm) thick stainless steel, unless otherwise indicated.
3. Bases, as indicated on Drawings and Specifications:

   a Legs: 1-5/8 inch (41.3 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel with stainless-steel gusset and adjustable insert bullet-type feet with minimum adjustment of 1 inch (25 mm) up or down without exposing threads, unless otherwise indicated.
   b Curb: 0.079-inch (2.0066-mm) thick galvanized steel, fully welded and reinforced where necessary

4. Undershelves: Minimum 0.625-inch- (1.588-mm-) thick stainless steel, unless otherwise indicated.
5. Top and Undershelf Reinforcement: Provide minimum 0.0781-inch- (1.984-mm-) thick, stainless-steel reinforcing, unless otherwise indicated.

E. Sinks: Fabricate of minimum 0.0781-inch- (1.984-mm-) thick stainless steel with fully welded, 1-piece construction. Construct 2 sides and bottom of sink compartment from 1 stainless-steel sheet with ends welded integral and without overlapping joints or open spaces between compartments. Provide double-wall partitions between compartments with 1/2-inch- (13-mm-) radius rounded tops that are welded integral with sink body. Cove horizontal, vertical, and interior corners with 3/4-inch (19-mm) radius. Pitch and crease sinks to waste for drainage without pooling. Seat wastes in die-stamped depressions without solder, rivets, or welding.

1. Wastes: 2-inch (50-mm) nickel-plated bronze, rotary-handle waste assembly with stainless-steel strainer plate and nickel-plated brass, connected overflow.
2. Drainboards: Minimum 0.0781-inch- (1.984-mm-) thick stainless steel, pitched to sink at 1/8 inch/12 inches (3 mm/300 mm) of length. Reinforce drainboards with minimum 0.0781-inch- (1.984-mm-) thick stainless steel, unless otherwise indicated.
3. Legs: 1-5/8 inch (41.3 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel with stainless-steel gusset welded to 0.1094-inch- (2.779-mm-) thick, stainless-steel support plate. Provide adjustable insert bullet-type feet with minimum adjustment of 1 inch (25 mm) up or down without exposing threads, unless otherwise indicated.

4. Drainboard Braces: 1 inch (25 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel, unless otherwise indicated.
5. Cross Bracing: 1-1/4 inch (31.75 mm) OD, minimum 0.0625-inch- (1.588-mm-) thick stainless steel, unless otherwise indicated.

F. Wall Shelves and Overshelves: Fabricate to comply with referenced SMACNA standard, unless otherwise indicated, and with minimum 0.0625-inch- (1.588-mm-) thick, stainless-steel shelf tops and 0.078 (14 ga.) stainless-steel brackets.

G. Drawers: Provide lift-out type, 1-piece, die-stamped drawer pan fabricated from 0.050-inch- (1.27-mm-) thick stainless steel with radius corners inside. Support drawer pan with 0.0625-inch- (1.588-mm-) thick, stainless-steel channel frame welded to drawer front. Provide 1-inch- (25-mm) thick, double-wall front fabricated from 0.0625-inch- (1.588-mm-) thick stainless steel and with integral recessed pull. Fill void in drawer front with semi-rigid fiberglass sound dampening. Mount drawers on NSF-certified, full-extension, stainless-steel drawer slides that have minimum 100-lb (45-kg) load capacity per pair, ball-bearing rollers, and positive stop. Mount drawer slides for self-closing on drawer housing as indicated.

H. Doors: Provide hinged, stainless steel Type 304, 0.0500-inch (1.27-mm) thick doors, unless otherwise indicated.

1. Double pan construction. Outside pan to have corners welded, ground smooth, and polished. Inner pan to be fitted tightly into outer pan with rigid sound deadening material such as Styrofoam.
2. Door overall thickness to be 0.75” (19-mm) for non-refrigerated, 1-inch (25-mm) for refrigerated compartments with deep draw insulated interior liner, unless otherwise noted. Provide reinforcing to prevent flexing.
3. Doors to be flush with mullions and have integral door pulls.
4. Provide with self-aligning 20-lb pull magnetic catches, aligned with door pulls.

2.5 STAINLESS-STEEL FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

1. Remove or blend tool and die marks and stretch lines into finish.
2. Grind and polish surfaces to produce uniform, directional textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

B. Concealed Surfaces: No. 2B finish (bright, cold-rolled, unpolished finish).

C. Exposed Surfaces: No. 4 finish (bright, directional polish).

D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

E. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.

2.6 FOOD SERVICE EQUIPMENT SCHEDULE

These items are to be provided and installed by Kitchen Equipment Contractor (KEC), unless otherwise noted. All items Not in Kitchen Equipment Contract (NIKEC) are to be provided and installed as part of the general contract agreement.

ITEM NO. 208 - DISHWASHER, CONVEYOR TYPE (1 REQ'D)
Hobart Model CL44EN-BAS+BUILDUP
Conveyor Dishwasher, single tank, (202) racks/hour, insulated hinged doors, .62 gallon/rack, stainless steel enclosure panels, microprocessor controls with low temperature & dirty water indicators, ENERGY STAR®

1 ea. Model CL44EN-BASHTE15K Electric tank heat 15kW
1 ea. Model CL44EN-BASERH30K 30kW electric booster
1 ea. Single Point (1) service connection standard (Field convertible options available)
1 ea. Model CL44EN-BASELE0CD 480v/60/3-ph
1 ea. Model CL44EN-BASHGTHTS Higher than standard
1 ea. Model CL44EN-BASDIR0LR Left to right operation
1 ea. Model CL44EN-BASFETSTD Standard feet
NOTE: For water of 3-grains of hardness or more, Hobart suggests adding a water softener.
1 ea. Model DWTCLE Drain water tempering kit for CLE models
1 ea. Installation of DWT kit only (NET)
2 ea. Model VNTHD/E-ADJ E-series vent hood domestic
1 ea. Model CLE/TBL-SWITCH Table LMT switch CLE-Series

ITEM NO. 209 - STEAM EXHASUT FAN FOR DISH WASHER (1 REQ'D)
Greenheck Fan Model EXHAUST FAN
Exhaust fan and plenum to connect to provided by mechanical contractor.

ITEM NO. 210 - S/S WATER TIGHT DUCT TO CEILING CONNECTION AT EXHASUT FAN (1 REQ'D)
Custom Model S/S DUCTING
18 ga. s/s welded pant duct to connect to dishmachine vent cowls and to exhaust fan plenum at ceiling. Field verify, shop drawing required.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances, service-utility connections, and other conditions affecting installation and performance of food service equipment. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Examine roughing-in for piping, mechanical, and electrical systems to verify actual locations of connections before installation.

3.2 INSTALLATION, GENERAL

A. Install food service equipment level and plumb, according to manufacturer's written instructions, original design, and referenced standards.

B. Complete equipment field assembly, where required, using methods indicated.

1. Provide closed butt and contact joints that do not require a filler.
2. Grind field welds on stainless-steel equipment smooth, and polish to match adjacent finish. Comply with welding requirements in "Fabrication, General" Article.

C. Install equipment with access and maintenance clearances according to manufacturer's written instructions and requirements of authorities having jurisdiction.

D. Provide cutouts in equipment, neatly formed, where required to run service lines through equipment to make final connections.

E. Except for mobile and adjustable-leg equipment, securely anchor and attach items and accessories to walls, floors, or bases with stainless-steel fasteners, unless otherwise indicated.

F. Install cabinets and similar equipment on concrete or masonry bases in a bed of sealant.

G. Install trim strips and similar items requiring fasteners in a bed of sealant. Fasten with stainless-steel fasteners at 48 inches (1200 mm) on center, maximum.

H. Install sealant in joints between equipment and abutting surfaces with continuous joint backing, unless otherwise indicated. Provide airtight, watertight, vermin-proof, sanitary joints.

3.3 PROTECTING

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, that ensures food service equipment is without damage or deterioration at the time of Substantial Completion.

3.4 INSPECTION AND PUNCHLIST

A. Upon completion of installation and KEC internal quality check, KEC will notify Architect to schedule inspection of equipment and installation by the consultatnt.

B. KEC shall make changes indicated in punch list within 5 business days, unless otherwise noted.

C. KEC shall provide a qualified representative to be present during Health Department Inspection.

D. KEC shall make changes to comply with Health Department requirements, without delay.

3.5 COMMISSIONING

A. Startup Services: Engage factory-authorized service representatives to perform startup services and to demonstrate and train Owner's maintenance personnel as specified below.

1. Coordinate food service equipment startup with service-utility testing, balancing, and adjustments.
2. Remove protective coverings and clean and sanitize equipment, both inside and out, and re-lamp equipment with integral lighting. Where applicable, comply with manufacturer's written cleaning instructions.
3. Test each equipment item for proper operation. Repair or replace equipment that is defective in operation, including units that operate below required capacity or that operate with excessive noise or vibration.
4. Test refrigeration equipment's ability to maintain specified operating temperature under heavy-use conditions. Repair or replace equipment that does not maintain specified operating temperature.
5. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
6. Test motors and rotating equipment for proper rotation and lubricate moving parts according to manufacturer's written instructions.
7. Test water, drain, oil, refrigerant, and liquid-carrying components for leaks. Repair or replace leaking components.

8. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance for each food service equipment item.
9. Review data in the operation and maintenance manuals. Refer to Division 1 Section 01 78 00 "Closeout Submittals".
10. Schedule training with Owner, through Architect, with at least 7 days' advance notice or as required in Section 01 79 00 “Demonstration and Training”.

END OF SECTION 11 40 00

22 00 00

PLUMBING

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 22 01 00

PLUMBING GENERAL PROVISIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide items, articles, materials, operations and methods listed, mentioned and scheduled on drawing and specifications, including labor, material, equipment or fixtures, and incidentals necessary or required for the completion, testing, inspection, adjusting, re-testing and readjusting to provide the various systems operable and complete in all respects.

B. Provide fixtures and equipment which have been listed in the Material Standards by School District.

1.02 RELATED SECTIONS

A. Section 22 07 00 Plumbing Insulation

B. Section 22 20 00 Plumbing Systems

1.03 DRAWINGS AND SPECIFICATIONS

A. Examine and become familiar with all project drawings and sections of the specifications, and coordinate the work accordingly. Make reasonable modifications in the layout and installation as needed to prevent conflict with work of other trades and for proper execution of the work, without additional cost.

B. The drawings indicate approximate locations of equipment, fixtures, piping, etc., however, prior to ordering any equipment, fixtures or materials, or performing any work, all dimensions, locations, and clearances shall be verified by the Contractor, based on actual field conditions, following the necessary coordination with other trades.

C. The substitutions of equipment or fixtures may not be the same as that which was used as a basis for design. The term substitutions only refers to items listed in our specification that are not used as the basis of design on our drawings. Provide all necessary revisions to the installation, or work of all other trades to accommodate the substituted equipment or fixtures, maintaining comparable clearances and provisions for maintenance shall be provided, with all related costs, by the Contractor. Submit substituted working drawings and submittals that have been coordinated with all other associated trades, showing the proposed installation.

D. It is the intention of the specifications and drawings to call for finished work, tested and ready for operation.

E. Where any device or part of equipment or fixtures is herein referred to in the singular number, such reference shall be deemed to apply to as many such devices as are required to complete the installation or as shown.

1.04 SUBMITTALS - SHOP DRAWINGS/PRODUCT DATA/MATERIAL CERTIFICATIONS

A. Submittals shall include six copies of all shop drawings, product data and material certifications for the project. These submittals shall be sent to the School District Representative.

B. School District Representative will review the shop drawings, product data and material certifications for the project. Do not fabricate pipe or order any equipment or fixtures without shop drawings and product data being approved. All pipe systems, equipment, fixtures and other accessories require submittal review.

C. Shop drawings, product data and material certifications shall be complete in every respect so that a thorough review and evaluation can be performed. All required shop drawings, product data and material certifications shall be submitted at one time. Incomplete submittals, those without shop drawings, those that are not prepared properly, or submittals with less than the required number of copies, shall be returned for resubmittal.

D. It is intended that only a one-time review of all shop drawings and submittals will be performed.

E. All shop drawings, product data and samples submitted by the Contractor shall illustrate details of work, equipment, fixtures, materials, products, systems, designs or workmanship that the Contractor intends to use in order to comply with the design concept established in the contract documents. The review of these submittals is only for the limited purpose of checking the same for conformity with the design concept of the work as established in the contract documents. The review is not intended to be for the purpose of determining the accuracy of other matters that may be contained in such submittals, including but not limited to such matters as dimensions, quantities and performance of equipment. Contractor shall furnished construction means, methods, techniques, sequences, procedures or safety precautions, the correctness of which as set forth in the contract documents or submittal shall be the sole responsibility of the Contractor.

F. Only equipment, fixtures, material and components of those manufacturers indicated in this specification are acceptable. Products that have not been reviewed and accepted by the School District Representative before the bidding period will not be accepted.

To be considered as a acceptable confirm that the alternate manufacturers' equipment or fixture is comparable with regard to such features as noise level, power requirements, metal gauges, vibration attenuation, finish, appearance, certification of recognized testing agencies and standard bureaus, allowable working pressures, physical size and arrangement. The Contractor shall also consider the effect of installation in the available space, factory-applied insulation, electrical devices, controls, access to internal parts, operating efficiencies, and all other features and capacities specified herein. The School District Representative shall be the judge of the ability of any equipment, fixture or material to meet the requirements of this specification and the burden of proof shall be the responsibility of the Contractor.

G. Format: Each type of equipment, fixture or material shall be submitted in a separate section of the submittal package and each such section shall have:

H. A cover sheet identifying the equipment or fixture by the numbers or letter identical to those listed on the Drawings and/or Specifications, the manufacturer, the model number and size, and the technical data required for each piece of equipment or fixture. Materials shall be identified by system type.

I. Dimensional drawings (including optional accessories appropriate to this project).

J. Electrical data tables showing voltage, phase, horsepower (or kW), full load (or rated load) amperes and maximum fuse protection for each piece of equipment.

K. Capacity data tables.

L. Each submittal shall specifically reply to every item of equipment, fixture or material specified or scheduled. All information shall be listed on the submittal cover sheet and shall be marked in the submitted manufacturer's literature. All exceptions to the individual specifications shall be listed separately on the submittal cover sheet and shall be noted on submittal "cut sheet".

M. Shop drawings are required for the plumbing systems. Submit one set of original drawings suitable for reproducing clear copies and provide six copies of drawings. The shop drawings will be reviewed. Contractors shall reproduce copies for their use. Shop drawings, equipment, fixture and material submittals shall be delivered at the same time.

1.05 INVESTIGATION OF CONDITIONS

A. Where new underground trenching is required on sites or in any area where existing underground utilities exist, the contractor shall provide an independent professional utility locating service to locate exact vertical and horizontal locations of all existing utilities. Where existing utilities are found the contractor shall hand dig those areas to avoid disruption, the conductor shall be responsible for immediate repairs to existing underground utilities damage during construction. The contractor shall repair all existing asphalt, concrete and landscape surfaces damaged or removed during construction to match their original conditions. Where trenching extends through public streets or roadways, the contractor shall notify underground service alert in addition it the independent locating service before start of construction to determine location of existing utilities.

B. This project is on an existing site with existing utilities and an examination of the site is mandatory.

C. Examine the existing conditions bearing on labor, transportation, handling and storage of materials, etc. Visit the site to understand the nature and scope of all work to be performed. The submission of a bid will be taken as evidence that such an examination has been made and all conditions have been considered.

1.06 EXISTING INSTALLATION AND CONFLICTS

A. Existing active services, water, sewer, electric, other piping systems, when encountered, shall be protected against damage due to construction work. Do not disturb operation of active services that are to remain.

B. If existing active services are encountered which require relocation, make request to the School District Representative for determination of procedures. Where existing services are to be abandoned, they shall properly terminate in conformance with requirements of the School District Representative.

C. If work makes temporary shut-downs of services unavoidable, consult with School District Representative as to dates, procedures and estimated duration of shut-down period in advance of the date work is to be performed.

D. Work shall be performed to assure that the existing operating services will be shutdown only during the time allowed and required to construct necessary connections. If a system cannot be shutdown, temporary bypass jumpers shall be installed until connections are complete.

E. Be responsible for all costs incurred by the above shut-downs, including bypass or jumper installations for work performed under Division 22.

F. If existing active utility services are encountered which require relocation, make request to School District Representative or other proper authorities for determination of procedures. Where existing services are to be abandoned, they shall properly terminated and capped.

1.07 ORGANIZATIONS

A. Below is a list of organizations that may be identified throughout the specifications by the letters in parenthesis only.

1. American Society of Mechanical Engineers (ASME)
2. American Society for Testing and Materials (ASTM)
3. American Water Works Association (AWWA)
4. Factory Mutual Laboratories (FM)
5. National Electrical Manufacturer's Association (NEMA)
6. Underwriters' Laboratories, Inc. (UL)
7. American National Standards Institute (ANSI)

1.08 DEFINITIONS

A. Furnish: To purchase and supply equipment, fixtures, materials or components and deliver to the jobsite.

B. Install: To place, fix in position, secure, anchor, etc., including necessary appurtenances and labor so the equipment, fixtures or material of the installation will function as specified and intended.

C. Provide: To furnish and install.

D. Piping: Includes, in addition to pipe, all fittings, flanges, valves, hangers, and other accessories related to such piping.

E. Concealed: Means hidden from sight in chases, furred spaces, shafts, hung ceilings, or embedded in construction.

F. Exposed: Means not installed underground or "concealed" as defined above. Tunnels, trenches, attic spaces and crawl spaces are considered exposed.

G. Accepted/Acceptable: Items, that in the opinion of the School District Representative, are acceptable alternates for the item specified.

1.09 CODE, PERMITS AND FEES

A. The drawings and specifications take precedence when they are more stringent than codes, ordinances, standards and statutes. Codes, ordinances, standards and statutes take precedence where they are more stringent than the drawings and specifications.

B. Secure and pay for permits, tests, Certifications of Inspection, and all other costs incidental to the work.

1.10 GENERAL COORDINATION OF WORK AND WORKING PROCEDURES

A. All equipment, fixtures and materials shall be covered or otherwise protected from the weather, theft, etc., both when stored on the site and after installation, until final acceptance by the School District Representative. All open ends of installed piping for partially completed systems shall temporarily be plugged and capped.

B. All materials of construction shall be new and shall bear the manufacturer's labels and trademarks.

C. The specifications indicate general requirements for the installation of all equipment, fixtures and materials however, follow the specific instructions and directions furnished by the equipment or fixture manufacturer.

D. All equipment or fixtures shall be installed with full consideration of future maintenance. Equipment or fixtures that are installed such that it cannot be readily serviced shall be removed and installed correctly as directed to facilitate servicing.

E. Unions, valves, and other components that may require lubrication or maintenance shall be located to provide sufficient accessibility. When necessary, provide access doors as hereinafter specified at all locations where these items are concealed within walls, chases, or above ceilings which do not have an inherent accessibility feature.

F. Prior to testing clean and flush all piping systems.

G. Surfaces to be painted shall be wiped, scraped, or wire-brushed as necessary to a clean, smooth painting surface, free from oil, rust and dirt. All material and equipment that is furnished with a factory prime coat of paint, which is damaged in transit, during storage, or from exposure to weather, shall be prime painted.

H. Contractor shall be responsible for costs related to damage caused by leaks in piping systems, or any other malfunction of the equipment, fixtures, materials, systems, or work, including repairs, replacements, etc.

I. Contractor shall provide information to other Contractors relative to all required pipe penetrations in walls, floors, roofs etc. The Contractor shall provide information to other Contractors relative to heights of piping systems. Structural work shall not be altered in any way.

J. All necessary cutting and patching of roofs, walls, floors, ceilings, etc., as required for the proper installation of the work under this section, shall be performed, and in a neat and workmanlike manner. No joists, beams, girders, columns, or other structural member shall be cut.

K. Contractor to provide all scaffolding, rigging, hoisting, and services necessary for erection and delivery into the premises for all equipment, fixtures and materials, and remove same from premises when no longer required.

L. Carefully lay out work on the premises and make proper provision for the other work. The exact location of each item shall be determined by reference to the drawings, by measurements at the building, and in cooperation with other contractors. Be responsible for accurately locating all openings for pipes, etc., and all access doors required.

M. Schedule and coordinate work so as to execute expeditiously the contract and to avoid unnecessary delays.

N. Examine fully the specifications and drawings for other trades, to become familiar with all conditions affecting work, and consult and cooperate with other trades for determining space requirements and adequate clearances with respect to other equipment in the building.

O. If the work is installed without coordinating with other trades, and the installation interferes with their installation, the contractor shall make any changes necessary in this work to correct conditions without extra charge.

1.11 ELECTRICAL

A. Coordinate the voltage and phase characteristics of each electrical item such as electrical water heaters, fixture electrical sensors and motors with the electrical shop drawings.

B. NEMA Standards shall be taken as minimum requirements for design and performance.

C. Motors shall be suitable for load, duty, voltage, frequency, hazard and for service and location intended. Motors shall be high efficiency type. Motors shall have name plate giving manufacturers name, shop number, HP, RPM and current characteristics.

1.12 MOTOR STARTERS

A. Provide motor starters for all plumbing equipment. Provide correct size and voltage characteristics per electrical requirements. Motor starters shall be provided by Division 22 and coordinated with electrical drawings.

1.13 EQUIPMENT SUPPORTING PROVISIONS

A. Contractor shall confirm locations with School District Representative before installation of hangers, platforms, equipment frames, etc. Contractor shall coordinate all related work with other trades.

B. Equipment schedules on the drawings indicate a particular manufacturer for all equipment and the architectural and structural drawings indicate supports and other design considerations which were based on the use of this equipment.

C. Contractor shall confirm all support dimensions and locations based on the actual equipment to be installed and shall coordinate all related work with other Contractors.

D. Where supports, foundations, stands, suspended platforms for equipment are indicated on drawings or specified in specifications design and construct supporting structures of strength to safely withstand stresses to which they may be subject and to distribute properly the load and impact over building areas. Conform to applicable technical societies' standards, also to codes and regulations of agencies having jurisdiction. Contractor shall provide sufficient supports as required. These supports are for foundations, supporting stands, platforms and they shall be connected to the building structural members. All equipment shall be bolted to supports, foundations, stands and platforms. Design of the supports, foundations, supporting stands and platforms must be approved by a California State Licensed Structural Engineer.

1.14 PIPE SLEEVES

A. Sleeves shall be schedule 40 galvanized steel pipe.

B. Pipe motion due to expansion and contraction will occur, make sleeves of sufficient diameter to permit free movement of pipe. Where pipes are insulated, make sleeves of sufficient diameter to pass pipe insulation. Check floor and wall construction and finishes to determine proper length of sleeves for various locations. Terminate sleeves flush with walls, partitions and ceiling. Extend sleeves 1/4" above finish floor, except in equipment rooms and other areas where water may accumulate on floor, extend to 1-1/2".

C. Set sleeves in ample time to permit pouring of concrete or to allow progression of other work as scheduled. Fasten sleeves securely so that they will not become displaced when concrete is poured or when other construction around them. For sleeves in fire walls, pack space between sleeve and pipe with approved non-combustible material and as otherwise required by local code; for floors where water is to be kept out, fill with graphite packing and caulking compound.

D. Sleeves in underground walls shall be 1-1/2" larger than outside diameter of pipe. The space between sleeve and pipe shall be sealed with 1" long wool and 1/2" water tight flex caulking on both sides of the wall. The seal shall be guaranteed watertight.

1.15 ESCUTCHEONS

A. Provide 20 gauge escutcheons at all pipe penetrations in walls, ceilings and floors. Escutcheons shall be one piece or hinged two piece type with positive latch or setscrew, and shall be polished chrome plated in finished rooms, and polished brass in other areas. Escutcheons shall have tempered springs or other means to insure positive attachment to pipe. The escutcheon opening shall be of sufficient diameter to fit around the insulation of insulated pipes, and the outside diameter of the escutcheon shall be of sufficient size to conceal the pipe sleeves.

1.16 EXPANSION AND FLEXIBILITY

A. Install all work with regard for expansion and contraction to prevent damage to the piping, equipment, fixtures and the building and its contents. Provide piping offsets, expansion loops, approved type expansion joints, anchors or other means to control pipe movement and to minimize pipe forces.

1.17 ACCESS PANELS/DOORS

A. Provide access panels/doors. Refer to other Division 22 Sections for further reference. Provide access panels/doors with have same fire rating as ceiling, wall in which they are installed, and shall be of sufficient size to provide the required accessibility.

B. Provide access panels/doors where necessary to provide access to concealed water hammer arrestors, trap primers, cleanouts, shut off valves, control valves etc.

C. Access doors:

1. Material and Manufacturer: Stainless Steel Series is 16 gage #304 stainless steel door and frame. Provide cylinder key lock. Equal to MIFAB UA-SS. All MIFAB cylinder locks are keyed alike.

2. Sizes shall be 14" X 14" at easily accessible valves, water hammer arrestors, trap primers, cleanouts etc; 18" X 18" where partial body access is required; 24" X 24" where entire body access is necessary.

3. Confer with other contractors with respect to access panel locations and shall wherever practicable group mechanical and electrical equipment in such a way as to be accessible from a single panel and reduce number of doors required.

1.18 TRENCHING, EXCAVATING AND BACKFILLING

A. Perform all trenching, excavation and backfilling necessary for the installation of underground piping sewers, natural gas, water piping, receivers, and other piping as required.

B. Obtain the services of an "Underground Locator Service". This Underground Locator Service shall identify all utilities or structures that may be in the path of the underground piping.

C. Concrete and asphalt shall be removed by first providing saw cut lines. These new saw cut lines shall be at existing joints. For concrete cut and removal, a whole section of concrete from joint line to joint line shall be cut and removed.

D. Dig trenches to required grade and depth with only sufficient earth material removed to provide working space. Trenches dug below the required depth shall be refilled to proper depth with sand.

E. Restore to original condition all paved surfaces, including concrete, asphalt, landscaping and any other work which was cut or disturbed through the performance of work under this contract. New concrete and asphalt shall match the existing thickness, density, quality, material characteristics and surface appearance.

F. All testing and inspections shall be complete, and approvals obtained, before backfilling is performed.

G. Backfill material around pipe shall consist of sand. Provide a minimum of 4 inches of sand all round piping systems. The remainder of the backfill materials shall be free of rocks, debris, and other foreign materials and shall consist of earthy sand.

H. Provide tracer wire around site non metallic water piping systems. Provide tracer wire around site non metallic natural gas piping systems. Tracer wire shall be 14 gauge copper wire with plastic covering. Tracer wire shall extend 6 inches above grade at the ends of the piping systems. Provide warning tape a minimum of 18" above pipe.

I. Water puddle and tamp backfill material in layers of approximately 6" up to finish grade, and as otherwise required so that no settling will occur.

J. All excess excavated materials shall be disposed of.

1.19 CORROSION PROTECTION

A. All metallic piping underground shall wrap with 2 layers of 10-mil plastic tape.

B. No pressurized water lines or natural gas lines will be permitted under building the concrete slab.

C. All natural gas and water valves, water pressure regulators and other devices shall installed in pre-cast concrete yard boxes with galvanized steel lids. All natural gas and water valves, water pressure regulators and other devices will not be installed in any soil.

D. Any piping passing through concrete floors, walls or roofs shall be sleeved and wrapped 3 times with plastic foam wrap. Provide epoxy joint sealer, non-shrink, waterproof caulking around all piping risers coming up through concrete floors & sidewalks. If the floors, walls or roofs are existing then core these areas. Provide foam sealant and epoxy joint sealer (non-shrink) waterproof caulking around the space between the pipe and the floors, walls or roofs.

E. Provide one piece natural gas transition riser from PE pipe to steel pipe. The schedule 80 steel section of the riser shall be epoxy coated. The transition riser shall meet NFPA-58 and ASTM D2513.

1.20 FIRE STOPPING

A. Provide fire stopping at all rated floors, walls or roofs. Use UL listed materials and methods for sealing these areas.

1.21 IDENTIFICATION OF EQUIPMENT

A. Each item of equipment shall be permanently labeled with a plastic nameplate of sufficient size to clearly indicate the identification designation appearing on the construction drawings. Letters shall be a minimum of 2 inches high.

1.22 GENERAL TESTING REQUIREMENTS FOR EQUIPMENT AND FIXTURES

A. The following requirements are supplementary to tests specified for individual equipment, fixtures or systems in other Division 22 sections:

1. Furnish labor, materials, instruments, electric power, etc., and bear all costs in connection with these tests.

2. Give a minimum of 72 working hour notification to the School District Representative when tests will be conducted. Coordinate test with other trades.

3. After the work has been completed, subject all systems to acceptance tests under normal operating conditions for periods of 5 working days to show compliance with Contract requirements. Submit to the School District Representative a written certificate that all tests have been performed in accordance with the specification requirements.

4. All motors shall run at their required speed without showing undue vibration, objectionable noise, or sparking for a period of 5 working days.

5. The drainage system shall be tested in accordance with the rules and regulations of the authoritative agencies.

6. Submit to the School District Representative a written certificate that all tests have been performed in accordance with the specification requirements.

B. Adjustments, repairs, and re-tests:

1. Make adjustments, repairs and alterations, as required to meet specified test results.

2. Correct defects disclosed by tests or inspections, and replace defective parts when directed.

3. In replacing defective parts, use only new materials, and in the case of pipe, replace with same length as defective piece.

4. Repeat tests after defects have been corrected and parts replaced, as directed and until pronounced satisfactory.

5. Bear the cost of repairs, and restoration of the work by other Contractors that have been damaged by the tests.

1.23 RECORD DRAWINGS

A. Maintain at the site, a set of record drawings, upon which shall be clearly indicated (by shading, coloring, or some other acceptable method) the day by day extent of the work installed. Indicate all changes to the original design at the end of each day.

B. At the completion of the construction phase, furnish to the School District Representative all necessary drawings showing work which was not installed as shown in the contract drawings. A minimum of one set of originals and three copied sets shall be furnished. Indicate all pertinent information, i.e., valve locations, pipe routing (dimensionally located), etc. All underground piping shall be located on the record drawings by two or more dimensions. All elevations (inverts) shall be shown with the point of elevation change clearly located. All valves shall be numbered and lettered to correspond with the numbers and letters on the site.

1.24 EMERGENCY REPAIRS

A. The Owner reserves the right to make emergency repairs as required to keep systems in operation without relieving the Contractor of his responsibilities during the post/partial beneficial occupancy.

1.25 OPERATION BY OWNER

A. The School District may require operation of parts or all of the respective installations prior to final acceptance. The Owner shall pay for cost of utilities for such operation. Operation of the installation shall not be construed as acceptance of the work.

1.26 INSTRUCTION MANUAL

A. Prior to completion of installation and final inspection of work, furnish to the School District Representative a minimum of three copies of complete instruction manual, bound in booklet form and indexed for each respective trade.

B. Manual shall contain the following items:

1. List of all equipment with manufacturer's name, model number and local representative, service facilities, and normal channel of supply for each item.

2. Manufacturer's literature describing each item of equipment or fixtures with detailed parts list.

3. Detailed step-by-step instructions for starting and shutdown of each system.

4. Detailed maintenance instructions for each system and piece of equipment or fixtures.

5. Copy of each automatic control diagram with respective sequence of operations.

6. Individual equipment or fixtures guarantees.

7. Certificates of inspections.

8. Copies of as-built construction and related shop-drawings.

9. All written material contained in manual shall be typewritten.

1.27 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to acceptance of work and during time designated by the School District Representative provide necessary qualified personnel to operate each system and fully instruct School District Facility Representatives in complete operations, adjustment, and maintenance of each respective installation.

1.28 GUARANTEES AND WARRANTIES

A. All work shall be guaranteed to be free from defects in material and workmanship for a period of one year from the date of final acceptance of the work, or a longer period if stipulated under specific headings. Replace at no additional cost any material, fixtures or equipment developing defects and also pay for any damage caused by such defects, or the correction of defects.

B. Use warrantee terms for specific items of equipment, relative to the work guarantee requirements of this specification.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3- EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 22 07 00

PLUMBING INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Provide labor, equipment and materials, and perform all operations necessary for the installation of insulation as indicated. This section includes thermal insulation for piping and equipment.

B. Provide complete Insulation Submittals and Shop drawings. Refer to Plumbing General Provision Section 22 01 00 Paragraph 1.4 Submittals - Shop Drawings/Product Data/Material Certifications.

1.02 RELATED SECTIONS

A. Section 22 01 00 Plumbing General Provision

B. Section 22 20 00 Plumbing Systems, Fixtures and Equipment

1.03 FIRE HAZARD CLASSIFICATION

A. Insulation shall have a composite (insulation, jacket or facing, and adhesive to secure jacket or facing) fire hazard rating as tested by ASTM E-84, NFPA 255, or UL 723 not to exceed 25 flame spread and 50 smoke developed. Materials labeled accordingly.

B. Insulation shall conform to current California Plumbing and Mechanical Code.

1.04 QUALITY ASSURANCE

A. Furnish insulation systems to the project site bearing the manufacturer's label.

B. Appearance shall be of equal importance with its mechanical correctness and efficiency.

1.05 PROTECTION

A. Protect insulation against dirt, water, chemical, or mechanical damage before, during and after installation. Any such insulation or covering damaged prior to final acceptance of the work shall be satisfactorily repaired or replaced.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.

1.07 SUBMITTALS

A. Comply with specification Section 22 01 00 General Provision for Plumbing.

B. Required Submittals

1. Piping insulation, jackets and accessories.

2. Equipment insulation and covering.

3. For each product being submitted, provide product description, list of materials, thickness, location of use and manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Acceptable manufacturers for insulation are Johns Manville Corporation, Owens-Corning and Knauf Insulation.

B. Acceptable manufacturers in addition to insulation manufacturers for adhesives, sealants and coatings are Foster Construction Products Inc.

C. Duct tape is not an approved sealer tape and shall not be used on this project.

2.02 PIPING SYSTEM INSULATION

A. Insulation Type

B. Glass Fiber: Johns Manville Micro-Lok meeting ASTM C547 or equal; rigid molded, noncombustible, Class 1 not to exceed 25 flame spread and 50 smoke developed.

1. 'K' ('KSI') Value: 0.23 at 75 degrees F (0.033 at 24 degrees C).

2. Maximum Service Temperature: 850 degrees F (454 degrees C).

3. Vapor Retarder Jacket: AP-T PLUS White kraft paper reinforced with glass fiber yarn and bonded to aluminum foil, secure with self sealing longitudinal laps and butt strips or AP Jacket with outward clinch expanding staples or vapor barrier mastic as needed. All insulation and jacket material shall be plenum rated.

4. Provide 18 gauge galvanized metal insulation shields at pipe hangers. Insulation shields shall provide an expanded surface area to carrier the weight of the piping without distorting or damage to insulation.

C. Elastomeric Foam: K-Flex Insul-Tube or equal; meeting ASTM C534, flexible, cellular elastomeric, molded or sheet, Grade 1 not to exceed 25 flame spread and 50 smoke developed:

1. 'K' ('KSI') Value: 0.28 at 75 degrees F (0.04 at 24 degrees C).

2. Maximum Service Temperature of 220 degrees F (104 degrees C).

3. Maximum Flame Spread: 25.

4. Maximum Smoke Developed: 50.

5. Connection: Waterproof vapor retarder adhesive, as needed; K-Flex 373 Contact Adhesive.

6. UV-Protection: Outdoor protective coating; K-Flex 374 Protective Coating.

7. Provide 18 gauge galvanized metal insulation shields at pipe hangers. Insulation shields shall provide an expanded surface area to carrier the weight of the piping without distorting or damage to insulation.

D. Field Applied Jackets

1. Aluminum Jacket: 0.016 inch (0.045 mm) thick sheet, (smooth / embossed) finish, with longitudinal slip joints and 2 inch (50 mm) laps, die shaped fitting covers with factory attached protective liner.

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Verify that piping has been pressure tested for leakage before applying insulation materials.

B. Verify that all surfaces are clean, dry and free of foreign material. Apply insulation on clean, dry surfaces free of any foreign matter and only after tests and approvals required by the specifications have been completed.

3.02 GENERAL INSTALLATION

A. Install materials in accordance with manufacturer's recommendations, building codes and industry standards.

B. Continue insulation vapor barrier through penetrations except where prohibited by code.

C. Insulation shall be installed by workmen regularly engaged in this kind of work in accordance with the manufacturer's recommendations.

D. All exposed raw edges shall be finished with finishing cement.

E. If staples are used, all must be coated with adhesive to maintain vapor barrier integrity. Thickness per ASHRAE Standards Table.

3.03 PIPING SYSTEM INSULATION INSTALLATION AND SCHEDULE

A. Pipe insulation shall be continuous through walls and floor openings except where walls and floors are required to be fire stopped or required to have a fire resistance rating. Where this occurs, the open space remaining between the sleeve and pipe shall be filled with fire stop insulation.

B. Insulation on piping indicated must be applied with a continuous, unbroken vapor seal. Supports, anchors, etc., that are secured directly to cold surfaces must be adequately insulated and vapor sealed to prevent condensation.

C. Insulated pipes shall be insulated continuously through hangers. Rigid insulation inserts and metal shields are to be provided at all pipe hangers and supports. Pipe insulation shall abut the rigid insulation insert. Apply a wet coat of vapor barrier lap cement on all butt joints and seal the joints with 3" wide vapor barrier tape or band.

D. Butt all joints firmly together and smoothly, secure all jacket laps and joint strips with lap adhesive.

E. Locate insulation and cover seams in least visible locations.

F. Neatly finish insulation at supports, protrusions, and interruptions.

G. Provide insulated pipes conveying fluids below ambient temperature with vapor retardant jackets with self sealing laps. Insulate complete system.

H. For insulated pipes conveying fluids above ambient temperature, secure jackets with self sealing lap or outward clinched, expanded staples. Bevel and seal ends of insulation at equipment, flanges, and unions.

I. Provide shield between isolation inserts and hanger supports. Shields shall be minimum of 20 gauge galvanized metal. Fabricate of Johns Manville Thermo-12 or other heavy density insulating material suitable for temperature. Insulation inserts shall not be less than the following lengths;

1 1/2" to 2 1/2" pipe size	10" long
3" to 6" pipe size	12" long
8" to 10" pipe size	16" long
12" and over	22" long

J. For pipe exposed in equipment rooms or unfinished spaces provide field applied aluminum jacket.

K. For exterior piping applications, provide field applied protection jacket or coating. Insulated pipe, fittings, joints, and valves shall be covered with field applied aluminum jacket. Jacket seams shall located on bottom side of horizontal piping.

L. For return air plenum areas provide non-combustible jacket.

M. Fittings and valves shall be covered with premolded one-piece insulated covers.

N. Piping Insulation Schedule, shall comply with 2016 Building Energy Efficiency Standards Table 120.3-A or below, whichever is more stringent:

1. Fiber Glass Insulation

a. Domestic Hot Water (supply and return piping):

pipe: up to 2"	1 inch thick
pipe: 2 1/2" to 4"	1 1/2 inch thick

b. Condensate piping system

pipe: up to 2"	3/4 inch thick

O. All fixtures that are accessible shall have an OFF-set grid drain permitting the trap to be installed flush with the wall. In addition provide PROWRAP insulation kit for exposed hot water pipe, tailpiece, and trap as manufactured by MCGUIRE, and secured per manufacturers recommendations. ADA fixtures only.

END OF SECTION

SECTION 22 20 00

PLUMBING SYSTEMS

PART 1 – GENERAL

1.01 SUMMARY

A. Furnish all labor, materials, services, testing, transportation and equipment necessary for the completion of all plumbing and piping and including the demolition and removal of certain existing fixtures, equipment, piping and appurtenances all as required and as indicated on drawings and specified herein. Work materials and equipment not indicated or specified which is necessary for the complete and proper operation of the work of this Section in accordance with the true intent and meaning of the contract documents shall be provided and incorporated at no additional cost to the School District.

B. Provide fixtures and equipment which have been listed in the Material Standards by School District / specified on drawing P0.2.

C. This section describes interior and exterior plumbing systems.

D. Provide Plumbing Submittals and Shop drawings.

E. A complete system of sanitary sewer piping and venting.

F. Roof drains, overflow drains and rainwater piping systems.

G. Complete domestic hot and cold water piping distribution system, including provisions for all plumbing fixtures and equipment. Provide connections to fixtures and equipment. Provide disinfection.

H. Condensate system for HVAC equipment.

I. Pipe hangers and other necessary support items.

J. Excavating and backfilling.

K. All Testing required and provide certificates.

L. Record Drawings.

1.02 RELATED SECTIONS

A. Section 22 01 00 Plumbing General Provisions

B. Section 22 07 00 Plumbing Insulation

1.03 SUBMITTALS

A. Comply with specification Section 22 01 00 Plumbing General Provisions.

B. Required Submittals

1. Plumbing fixtures and components.

2. Plumbing equipment and accessories.

3. Plumbing materials including piping, valves, and fittings.

1.04 REGULATIONS

A. All work covered by this Section shall conform to the latest requirements of the following regulations:

1. National Fire Protection Association.

2. State Division of Industrial Safety.

3. California Code of Regulations (CCR).

4. California Plumbing Code (CPC), California Code of Regulations, Title 24, Part 5.

5. California Fire Code, California Code of Regulations, Title 24, Part 9.

6. County Health Department.

7. Any other legally constituted bodies having jurisdiction thereof.

8. California Building Code (CBC), Title 24, Part 2:

9. Access plumbing fixtures shall comply with all of the requirements of CBC Section 1115B.

10. Heights and location of all fixtures shall be according to CBC Table 1115B-1.

11. Fixture controls shall comply with CBC Section 1117B.6.

B. Nothing in the specifications or drawings shall be construed to permit deviation from the requirements of governing codes unless approval for said deviation has been obtained from the legally constituted authorities having jurisdiction and from the School District representative.

1.05 GENERAL

A. Because of the small-scale drawings, it is not possible to indicate all offsets, fittings and accessories, which may be required. The Contractor shall carefully investigate the conditions surrounding installation of his work, furnishing the necessary piping, fittings, valves, traps, and other devices, which may be required to complete the installation.

B. The general arrangement indicated on the drawings shall be followed as closely as possible. Coordinate with the Architectural, Structural, Mechanical and Electrical Drawings prior to installation of piping fixtures and equipment to verify adequate space available for installation of the work shown.

C. All permits; inspections and licenses required by the legally constituted authorities for installation of the work according to the plans and specifications shall be obtained and paid as a part of the work of this section.

D. See Drawings for Points of Connection.

E. Certain site utilities are to be connected to and extended. Before laying of any pipe or digging of any trenches, Contractor shall determine by actual excavation and measurement exact location and depth of lines to which he is to connect. In event depth of lines is not sufficient to permit connection in manner indicated, obtain direction from the Owner's representative before proceeding with this work.

F. Before bidding on this work, make a careful examination of the premises to get thoroughly familiarized with the requirements of the contract. By the act of submitting a proposal for the work included in this contract, the Contractor shall be deemed to have made such study and examination, and that he is familiar with and accepts all conditions of the site.

G. Protect all work, equipment and materials at all times. Repair all damage caused either directly or indirectly by Contractor's workers. Close all pipe openings with caps or plugs during installation. Protect all equipment and materials against dirt, water, chemical and mechanical injury. Upon completion, all work shall be thoroughly cleaned and delivered in a new condition.

H. Contractor shall be held responsible for all damage to equipment and materials until he has received written notice from the School District Representative that his work has been accepted.

I. The locations of apparatus, piping and equipment indicated on the drawings are approximate. Piping and equipment shall be installed in such a manner as to avoid all obstruction, preserve headroom, and keep openings and passages clear. The locations of and mounting heights of all fixtures shall be coordinated with the architectural plans and room elevations.

J. Coordinate work with all other trades to avoid confliction and permit for a neat and orderly appearance of the entire installation. In advance of the work, furnish instructions to the General Contractor for the requirements for equipment and material installation of any kind, whether or not specifically mentioned on drawings or in the specifications, and include recesses, chases in walls, and all required openings in the structure. Should furnishing this information be neglected, delayed or incorrect and additional cuttings are found to be required, the cost of the same shall be charged to this Contractor.

K. Furnish, all at one time, prior to any installation, within the time noted below, six (6) copies of valid submittal data on all fixtures, material, equipment and devices. Each submitted item shall be indexed and referenced to these specifications and to put identification numbers on fixtures and equipment schedules.

L. Manufacturer's submittal literature and shop drawings are required on all items to ensure the latest and most complete manufacturer's data is available for review. Requirements of the submittals and Engineer's submittal notes are a part of the work of this Division except that Engineer's notes may not be used as a means of increasing the scope of work of this Division.

M. Submittals will be checked for general conformance with the design concept of the project but the review does not guarantee quantities shown and does not supersede requirements of this Division to properly install work.

A list of names is not a valid submittal. To be valid, all submittals must:

1. Be delivered to the School District Representative within thirty-five (35) days of award of the contract. Corrections or changes in submittals returned as inadequate or incomplete shall be accomplished within this time limit.

2. Include all pertinent construction, installation, performance and technical data.

3. Have all copies marked to indicate clearly the individual items being submitted.

4. Have each item cross-referenced to the corresponding specified item and be marked to show how differences will be accommodated.

5. Contain calculations and other detailed data justifying how the item was selected for proposal. Data must be completed enough to permit detailed comparison of every significant characteristic for which the specified item was analyzed during design.

6. Include, for every item, which differs in size, configuration, connections, service, accessibility, or any other significant way, a drawing to the same (or larger) scale as to the pertinent portions of the contract drawings. In this drawing show a complete layout of the system except that which is identical to the contract drawings, unless the unchanged portions must be shown to indicate such things as clearances. This drawing, together with the contract design drawings must show the complete system as revised to accommodate the proposed alternate.

N. Contractor shall not allow or cause any of his work to be covered up before it has been duly inspected, tested and approved by the School District Representative or authorized inspectors having legal jurisdiction over his work. Should he fail to observe the above, he shall uncover the work and, after it has been inspected, tested and approved, recover it at his own expense.

O. Requests for substitutions shall be in accordance with the requirements of Division I. Provide and perform tests required by Engineer for purpose of judging acceptability of proposed substitutions. Provide sufficient information to allow the Engineer to analyze any proposed alternate; the substitution will not be accepted and re-submittal will not be allowed if adequate information is not provided. The Contractor shall make all changes to the work of this trade and the work of all other trades resulting from a substitution at no additional cost to the District. The Representative shall be the sole judge as to the quality and suitability of proposed School District alternate equipment, fixtures, and materials; decisions of the School District Representative shall be final and conclusive.

P. Provide record drawings in accordance with the requirements of Division 1.

Q. Keep up-to-date a complete "as-built" record set of prints which shall show every change from the original drawings and the exact "as-built" locations and sizes of the work provided under this Section of the specifications. This set shall include locations, dimensions, depth of buried piping, cleanouts, shut-off valves, sewer invert locations, plugged wyes, tees, etc. On completion of the work the as-built drawings shall be delivered to the School District Representative. Upon approval the contractor shall make a digital scanned copy of the as built drawings. The scanned file name shall match the sheet number of the drawings.

R. Contractor shall guarantee the entire plumbing and piping systems unconditionally for a period of one (1) year after final acceptance. If, during this period, any materials, equipment, or any part of the systems fail to function properly, the Contractor shall make good the defects promptly and without any expense to the District.

S. Contractor shall be responsible for all damage to any part of the premises caused by leaks in pipelines or equipment furnished and installed under this Section for a period of one (1) year after date of acceptance of his work.

T. All equipment and fixtures shall carry manufacturer's warranty against defective parts or poor workmanship and shall not be less than one (1) year. See specific equipment specifications for extended warranty requirements.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment as indicated on the drawing, as specified, and required in the work shall be new and free from defects and imperfections.

B. See the fixture and equipment schedules and notes on the drawings for additional information including manufacturers, model numbers, accessories, capacities, electrical data, weights, and installation requirements.

2.02 PIPE AND FITTINGS

A. Soil and Waste System

1. Piping below and above grade within the building and outside within five feet (5') of the foundation shall be Solid Wall Schedule 40 Polyvinyl chloride (PVC) Gravity Sewer Pipe and Fittings. Schedule 40 Solid Wall Polyvinyl chloride (PVC) DWV Gravity Sewer Pipe and Fittings. Solid wall PVC pipe and fittings shall be made by virgin PVC compounds meeting the ASTM D-2665. PVC shall comply with ASTM D-1785. For glue joints, provide Weld-On #2721 medium bodied blue glue. Provide protection at penetrations of walls, floors, ceilings and fire resistance rated assemblies in accordance with ASTM E814. The "F" rating must be a minimum of the hourly rating of the fire resistance rated assembly that the plastic pipe penetrates.

B. Water System

1. Piping within the building and above grade shall be Type "L" ASTM B88, hard drawn copper tubing with wrought copper sweat fittings ANSI B16.22.

2. Water piping underground shall be Type "K" ASTM B88, hard drawn copper with wrought copper sweat fittings ANSI B16.22.

3. Water piping below the building floor shall be Type "K" soft annealed copper tubing with no fittings.

C. Indirect Waste Piping

1. Shall be the same as Soil and Waste Piping.

D. Condensate Drain System

1. Piping: (Air Conditioning units) shall be Type "M" copper as specified for water piping.

E. Exposed drain piping at plumbing fixtures shall be chrome plated yellow brass except exposed pipes in shop or utility areas.

F. Unions or flanges shall be furnished and installed at each threaded connection to all equipment or valves. The unions or flanges shall be located so that the piping can be easily disconnected for removal of the equipment, tank, or valve, and shall be of the type specified in the following schedule.

1. Unions:

a. Black Steel Pipe: 250 pound screwed black malleable iron, ground joint, brass to iron seat.

b. Galvanized Steel Pipe: 250 pound screwed galvanized malleable iron, ground joint brass to iron seat.

c. Copper or Brass Tubing: 150 pound cast bronze or copper, ground joint, nonferrous seat with ends, by NIBCO or Mueller Industries.

2. Flanges shall be raised face 150 pound class forged steel, weld, neck or slip-on type conforming to ANSI B16.5 and ASTM A181. For copper piping systems, provide flanges conforming to ASME-ANSI B16.24. The faces of the flanges being connected to be alike in all cases. Locate flanges so that the piping can be easily disconnected for removal of the equipment or valve. Gasket material shall be of material suiting the service of the opening system in which installed and which conforms to its respective ANSI Standard (ANSI-AWWA C111/A21.11, ASME-ANSI B16.21). Provide materials that will not be detrimentally affected by the chemical and thermal conditions of the fluid being carried.

M. Underground cast iron, ductile iron, copper, steel or other metallic piping located both inside and outside of building shall be encased within a minimum of 10 mil polyethylene plastic sleeve sealed water tight with polyvinyl chloride tape. Sleeve shall terminate 3” above grade or floor slab.

N. Underground non-metallic piping shall have 16 gauge copper "Tracer Wire" continuous for entire length.

2.03 VALVES

A. Piping systems shall be supplied with valves arranged so as to give complete and regulating control of piping systems throughout the building, and locates so all parts are easily accessible and maintained.

B. Valve Design: Provide full port red brass ball valves. Gate valves are not allowed.

1. Sizes: Same size as upstream pipe, unless otherwise indicated.

C. Approved Manufacturers:

1. Hammond Valve
2. Watts
3. NIBCO
4. Apollo Valves

Provide Class 150 valves meeting the valve specifications where Class 125 valves are specified but are not available.

D. Ball Valves, 2 Inches and Smaller: Hammond 8501, MSS SP-110, U.S. Safe drinking water act (SDWA) Rated for 150 psi saturated steam pressure, 600 psi WOG pressure; two-piece construction; with bronze body and single reduce bore or better, chrome plated solid brass ball, "Teflon" seats and seals, separate adjustable packing gland and nut, blowout-proof stem and vinyl covered steel handle.

E. Swing Check Valves, (Hammond IB 944), MSS SP-80; Class 200, cast-bronze body and cap conforming to ASTM B61; with horizontal swing, Y-pattern, and bronze disc. Provide valves capable of being refitted while the valve remains in the line.

2.04 HOSE BIBBS

A. Hose Bibbs shall be Acorn, Zurn or approved equal, as specified on drawing P0.2.

2.05 TRAPS, STRAINERS AND TAILPIECES

A. Every sanitary fixture, unless otherwise specified, shall be provided with a seventeen (17) gauge tailpiece chromium tailpiece, a Los Angeles pattern chrome plated cast-brass trap, and wall flanges. Provide chromium plated brass casing between the trap and wall flanges with each fixture. All sanitary waste system floor drains (3 inch minimum) and floor sinks shall have cast iron "P" traps.

2.06 CLEANOUTS

A. J.R. Smith, Zurn or Mifab cast-iron ferrule and countersunk brass clean-out plug with round cast iron access frame and heavy duty secured top cover.

B. Wall Cleanouts: Zurn No. Z-1468 for steel pipe and Zurn No. Z-1446 for cast iron pipe.

C. Floor Cleanouts: Zurn No. Z-1400, watertight ABS bronze plug and polished nickel bronze top.

D. Cleanouts to Grade: Zurn Heavy Duty Clean-out Housing Z-1474 with bronze plug set flush with surface for concrete areas. Asphalt or non-surfaced areas shall be installed with ring of concrete poured around the bottom flange six inches (6") below surface. Use cast iron soil pipe on cleanout risers. For cleanouts in non-traffic areas, terminate cleanout plug in concrete yard box.

2.07 ACCESS PANELS

A. Wall access panels shall be minimum 14" x 14" for concealed valves and other equipment unless otherwise specified or indicated. Ceiling access panels shall be 18" x 18" minimum.

B. Wall Panels: Elmdor, DW 14” X 14”– AKL, 14-gage Stainless Steel, Allen Key Latch, for all tile walls and dry wall walls in toilet rooms.

C. Ceiling Panels Elmdor, DW 18” X 18” –SS-AKL, prime coated steel, type as required for plaster, or dry wall ceilings. Allen Key Latch.

D. Fire Rated Walls: Elmdor, FR 14” X 14” –SS-CL, for all Fire rated tile walls and dry walls in toilet rooms provide stainless steel panels with cylinder Lock.

2.08 ESCUTCHEONS

A. Shall be chrome plated cast brass with set-screw locking device or slip on.

2.09 WATER HAMMER ARRESTORS

A. Provide where indicated on drawings of type indicated on equipment schedule and shall be sized per the manufacturer's recommendations. Install behind access panel.

2.10 DIELECTRIC UNION ISOLATORS

A. Where incompatible materials come in contact, isolate from each other with material best suited for the characteristics of materials to be isolated. Dielectric union isolator for connection piping or non-compatible materials shall be of standard commercial design with threaded connections.

2.11 PIPE SUPPORTS

A. The Contractor shall furnish and install all miscellaneous iron work including angles, channels, etc., required to appropriately support the various piping systems. Hanger spacing and location shall conform to California Plumbing Code requirements.

B. All horizontal runs of piping within the building, except for copper water supply stub-outs at fixtures and copper supply headers within walls, to be supported from the structural framing with steel rods and split ring hangers: Cooper B-Line, Grinnell Company, Tolco, or approved equal. Copper stub-outs and copper headers within walls to be supported from the wall framing with Holdrite pipe hangers and supports as specified at item 9, below. Steel rods shall be secured to overhead framing with side beam connectors. Where necessary, install angle iron between framing to accommodate hanger rods. Where several pipes are running together, Unistrut, Copper B-Line, or Powerstrut channels with clamps may be used in lieu of individual pipe hangers, and supported from structure as herein specified. Submit test data for type of hanger supports to be provided. For support conditions other than specified herein, the Contractor shall submit method of support for approval prior to any installation.

C. Makeshift, field devised methods of plumbing pipe support, such as with the use of scrap framing materials, are not allowed. Support and positioning of piping shall be by means of engineered methods that comply with IAPMO PS 42-96. These shall be Hubbard Enterprises/HOLDRITE support systems or Owner-approved equivalent.

D. Provide factory fabricated horizontal hangers and supports complying with one of the following MSS types listed to suit horizontal piping systems, in accordance with MSS SP-69, IAPMO PS 42, and manufacturer's published information. 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) B-Line B 3100

2. Adjustable Swivel Pipe Rings: (MSS Type 5) B-Line B 3690

3. Split Ring: (MSS Type 11)

4. Pipe Alignment and Support Brackets: (Per IAPMO PS 42) HOLDRITE products (see section.9.)

E. Provide factory fabricated vertical-piping clamps complying with the following types listed, 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.

1. Two-Bolt Riser Clamps: (MSS Type 8) B-Line B3373

2. For vertical mid-span supports of piping 4" and under, use Hubbard Enterprises/HOLDRITE Stout Brackets™ with Hubbard Enterprises/HOLDRITE Stout Clamps or two-hole pipe clamps (MSS Type 26).

F. Provide factory fabricated hanger-rod attachments B-Line, Tolco or approved equal, selected by Installer to suit horizontal-piping hangers and building attachments, in accordance with ANSI-MSS SP-58 and manufacturer's published product information. Select size of hanger-rod attachment to suit hanger rods. Provide copper-plated hanger-rod attachments for copper-piping systems.

1. Side beam eye socket, Tolco Fig. #57 for rod sizes 3/8" dia. and Tolco Fig. #25-30-251 for rod sizes 1/2" dia.

G. Provide factory fabricated building attachments, selected by Installer to suit building structural framing 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. For existing concrete construction, provide expansion shields.

H. Hanger Rods and Spacing shall conform to the following table:

Pipe Sizes	Spacing	Rods
2 Inch and Smaller	6 Feet	3/8 Inch
2-1/2 Inch to 3 Inch	8 Feet	1/2 Inch
4 Inch and larger	8 Feet	5/8 Inch

I. Hangers and Supports shall be adequate to maintain alignment and prevent sagging and shall be placed within 18 inches of joint. Support shall be provided at each horizontal branch connection.

J. When securing copper water supply piping directly to the DWV piping or to the wall framing (horizontal water headers and fixture stub-outs), the following copper-plated components of the “HOLDRITE” system are to be used as a support system:

1. For positioning supply/flush valve for wall-hung water closet, use model 114C (attaches to carrier) and 114C-EXT (extension for above, e.g., for fixtures to be used by handicapped).

2. For attachment to wall framing, use models 101-26, 102-26.

K. Provide piping support per anchorage notes on drawing P0.1 and details 10, 11, 12 and 13 on drawing P5.11.

L. Miscellaneous Supports, Wall Brackets, Etc.: Provide where required in accordance with the best standard practices of the trade. Submit shop drawings for all fabricated supports where engineered supports are not available.

M. 2.17.13 Isolators: All water piping shall be installed with a manufactured type isolator. Isolators shall be B-Line vibra clamp and cushion, Elmdor/ Stoneman, "Trisolator", or approved equal. Piping shall be installed and supported in a manner to provide for expansion without strains. Guides shall be properly installed to ensure this requirement.

N. Shields: Provide 20 gauge galvanized sheet metal shields at piping hangers for all insulated piping. Size shields for exact fit to mate with pipe insulation.

2.12 FIXTURES

A. See schedule on drawings.

B. Accessible plumbing fixtures shall comply with all of the requirements of California Building Code Section 1115B. Heights and locations of all fixtures shall be according to California Building Code Section 1115B.4 and DSA Check List Fig. 15-A. Fixture controls shall comply with California Building Code Sections 1115B.4.4.4 for showers, 1115B.4.3, Item 1 for lavatories, 1115B.4.1, Item 5 for toilets, and 1115B.4.2, Item 3 for urinals. Each accessible sink shall be a maximum of 6-1/2” deep. Sinks shall be mounted with the counter or rim no higher than 34” above the finish floor. CBC Section 1117B.9, Item 2.

C. Fixtures:

1. All floor drains shall be minimum 3” sanitary sewer pipe outlet.

2. Furnish complete with necessary trim, including stops. All trim and fittings shall be chrome-plated brass including handles, supply tailpieces, traps and escutcheons.

3. Connections to fixtures shall be in accordance with code requirements except as exceeded herein or on the drawings and in no case less than the supply stop size.

4. All plumbing fixture faucets submitted for review shall have identification label or certification showing compliance with California TITLE 24, PART 5, ARTICLE I, "Energy Conservation Standards". ARTICLE I, T20-1406; ARTICLE 2, T20-1525 and ARTICLE 4, 1604 and 1606.

5. Minimum waste sizes shall be four inch (4") for water closets and two inch (2") for lavatories.

6. Steel plate supports shall be provided for all wall hung fixtures. Supports shall be 3/8 inch thick x 6 inch wide steel plates recessed and lag screwed to wood studs or welded to steel studs and tapped for fixture bolts. Length and number of plates as required to satisfactorily support the fixtures installed.

PART 3 - EXECUTION

3.01 FIXTURE INSTALLATION

A. Water piping and drain connections shall not be smaller than the sizes allowed by the plumbing code.

B. Furnish all fixtures complete with supplies, individual stops, traps, escutcheons, trim and all other accessories to provide a complete fixture. Fixtures shall be set in place and secured to walls. Provide ADA trap and piping wrap at lavatories and sinks per ADA requirements.

C. All plumbing fixtures shall be bedded and caulked along joint at walls, countertops, and other intersecting surfaces with DAP Kwik-Seal Tub and Tile adhesive caulk. DAP package code number shall be 18001 white caulk.

D. Caulk around the bases of toilets, urinals and vitreous china sinks.

E. All faucets to be installed using "Plumber Putty" under the base of the faucet for a watertight seal.

F. Plumbing fixture trim and exposed supplies and waste shall be brass with polished chrome plated finish. Polished chrome plated piping, fittings, and valves shall not bear tool marks.

G. Provide backing for each plumbing fixture requiring same, at the time roughing-in is done.

H. After the fixture installation is complete, cover and protect the rims, front, and all exposed parts until the completion of the construction phase. The plumbing contractor shall be responsible for all damage to fixtures, and shall assume all related costs.

3.02 LOCATIONS AND ACCESSIBILITY

A. Sleeves for piping through masonry walls or floors shall extend completely through the walls or floors. Sleeves shall finish flush on both sides. Provide risers clamps at all floor penetrations.

B. Unions shall be installed after each screw-type valve, connections for all equipment, appliances and as required for erection and maintenance. No unions shall be installed in concealed location.

C. All condensate drains to have clean-outs at each horizontal run. Clean-outs shall be F.I.P. thread brass plugs.

D. All sanitary sewers, sanitary waste, and condensate lines and shall be graded at a minimum of 1/4" per foot unless other wise noted on the drawings. The sections of the pipe shall be laid and fitted so when completed the sewer will have smooth and uniform invert.

E. Install equipment for ease of maintenance and repair. If changes in the indicated locations or arrangements are made by the Contractor, they shall be made without additional charges.

F. Closing-In of Uninspected Work: Do not allow or cause any of the work to be covered up or enclosed until it has been inspected, tested, and accepted by the School District Representatives. Any work enclosed or covered prior to such inspection and test shall be uncovered and, after it has been inspected, tested, and approved, make all repairs with such materials as may be necessary to restore all work, including that of other trades, to its original and proper condition.

G. Before laying of any pipe or digging of any trenches, Contractor shall determine by actual excavation and measurement exact locations and depth of existing utility and service lines to which he is going to connect. Should existing conditions prevent for installation of piping as detailed on drawings or to make connection in manner indicated, Contractor shall confer with the School District Representative for Direction.

3.03 EXCAVATION, TRENCHING AND BACKFILL

A. Do all necessary trench excavation, shoring, backfilling and compaction required for the proper laying of the pipe lines. Remove all surplus earth materials from site.

B. Backfill shall be clean soil free from rocks and debris. Compact to ninety percent (90%) of surrounding soil. All piping both inside and outside of building shall be installed in a minimum 6" sand bed and covered with 6" of sand prior to backfill. Continue backfill with materials free of rocks and debris, properly moistened and mechanically tapered and compacted to 90% of surrounding soil. Compaction by flooding or jetting is expressly prohibited.

C. Water, soil and waste piping shall have twenty-four (24") of cover minimum, except all PVC pipe material. All other pipe shall have not less than eighteen inches (18") of cover, unless otherwise noted on the drawings. Offset water piping as required to permit crossover of underground piping systems, and electrical conduit systems.

D. Bottoms of Trenches: Cut to grade and excavate bell holes to ensure the pipes bearing for their entire length upon the outside periphery of the lower third of the pipe.

E. Trees: When it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and roots. Where a ditching machine is run close to trees having roots smaller than 2" in diameter, the wall of the trench adjacent to the trees shall be hand trimmed making clean cuts through the roots. All cuts through roots 1/2" and larger in diameter shall be painted with "Tree-Seal", or equal. Trenches adjacent to trees should be filled within 24 hours after excavation, but where this is not possible, the side of the trench adjacent to the tree shall be kept shaded with burlap or canvas. Stockpiling of earth or building materials within the drip line of trees is prohibited. Where any roots 2" and larger are encountered, the Contractor shall hand tunnel under root and protect it by burlap wrapping.

F. Water piping shall not be run in the same trench with sewer or drainage piping unless separated as required by the UPC as follows. The bottom of the water pipe at all points shall be at least twelve (12) inches above the top of the sewer or drain line. The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a minimum clear horizontal distance of at least twelve (12) inches from the sewer or drain line.

G. No piping shall run in, through or above any electrical equipment rooms or spaces at any time.

H. Horizontal soil and waste piping shall be installed to a uniform grade of not less than one fourth inch (1/4") per foot, unless otherwise indicated or directed.

3.04 PIPING INSTALLATION

A. Piping shall be concealed in finished portion of the building except where otherwise indicated or directed at the time the work is done. All piping shall be installed to clear all framing members and beams, even if drawings do not indicate same. Contractor shall constantly check the work of other trades so as to prevent any interference with the installation of this work.

B. Piping into stem walls and footings shall be double half lap wrapped with 1/8" thick "Armaflex" insulation. The Contractor shall also provide blocked out areas in stem wall and footing as required for the installation of the piping. All piping shall avoid the lower 8" of the footing and the Contractor shall coordinate and provide dropped footings as required for the installation of the underground piping.

C. Unions shall be installed on one side of all screwed shut-off valves, at both sides of screwed automatic valves and on all by-passes, at all equipment connections and elsewhere as indicated or required for ease of installation and dismantling.

D. Connections between copper tubing and equipment shall be with Mueller Industries, or approved equal, brass stream-line copper to P.P.S. ground joint unions.

3.05 CORROSION PROTECTION

A. All underground metallic piping such as cast iron (soil & drain), ductile iron (fire protection), copper (Water) or steel (gas) located both inside and outside of the building shall be encased within a minimum of 10 mil polyethylene plastic sleeve.

B. All underground metallic valves, unions, fittings, flanges, bolts & appurtenances that are unable to be encased within sleeve as noted above shall be protected as follows.

1. After mastic coating is completed and inspected, wrap entire metallic component with a minimum of 10 mil. Polyethylene wrap overlapped 50% of the circumference and extended beyond ends of component as required for polyethylene to be secured to piping. The overlap seam shall be located to avoid backfill material from entering the encapsulated area. The ends and seam of the of the polyethylene material shall be secured to the piping and sealed with 3M Scotch/Wrap N. 50, 10 mil., 2" wide, printed, pipe wrap sealing tape.

2. The mastic coating shall be inspected and approved prior to the finish application of the polyethylene material, which shall also be inspected.

3.06 SLEEVES

A. Shall be schedule 40 galvanized steel where pipes pass through concrete foundation walls and 22 gauge galvanized sheet metal in all other walls, floors and partitions.

1. Isolate pipes through ground floor slabs with double wrap Kraft paper, unless pipe sleeves as specified above as indicated or required by code.

2. Pack space between pipe and sleeves with ceramic fiber rope so as to be absolutely watertight.

3. All sleeve penetrations in or through fire rated stud walls, ceilings or floors shall be protected & sealed per U.L. Fire Resistance System No. WL1001 for uninsulated pipe and No. WL5039 for insulated pipe. All sleeve penetrations in or through fire rated concrete/masonry walls, ceilings or floors shall be protected and sealed per U.L. Fire Resistance System No. C-AJ-1116 for un-insulation pipe and No. C-AJ-5002 for insulated pipe. See architectural plans for all locations of rated walls and other fire rated assemblies.

4. Hanger rods required to pass through fire rated finished ceilings shall be protected as specified here in above and an escutcheon plate provided at face of penetration.

B. Contraction and Expansion: Install all work in such a manner that its contraction and expansion will not do any damage to the pipes, the connected equipment, or the building. Install offsets, swing joints, expansion joints, seismic joints, anchors, etc., as required to prevent excessive strains in the pipe work. All supports shall be installed to permit the materials to contract and expand freely without putting any strain or stress on any part of the system. Provide anchors as necessary.

C. Pipe Joints and Connections:

1. Copper Tubing and Brass Pipe with Threadless Fittings:

a. Solder joints for copper shall be made with 95/5 lead free solder in accordance with manufacturer's recommendations for the service intended and shall be NSF-ANSI Standard 61 certified approved.

b. Use threaded adapters on copper tubing where threaded connections are required.

2. Welded Joints: All welding to be performed by welders certified as passing ASME Boiler and Pressure Code (Section IX) and shall comply with ASME Std. B31.1.0 and the American Welding Society, Welding Handbook.

D. All closet bends shall be adequately blocked and secured. Trap arms and similar connections installed below the floor level or under concrete slabs shall be adequately supported and anchored to prevent motion in any direction. All piping installed above grade within buildings shall be secured to structural framing with Unistrut or pipe clamps to provide a rigid installation. Piping utilizing gaskets as a seal shall be given prime consideration to providing adequate stability through proper supports and anchors because of its flexible nature.

E. Flexible piping of any kind will not be permitted except when indicated on drawings provide Hose Master Inc., flexible pipe appliance connector model UNP, female union, male nipple and plastic cover, AGA approved for kitchen equipment only.

F. Each pipe penetration of the roof shall be separated from other piping and any roof equipment by a minimum of 18" to insure a proper pipe flashing installation.

G. Floor, Wall and Ceiling Plates: Where pipes pierce finished surfaces, C.P. brass split flanges with set screw lock shall be provided.

H. Roof Flashings: Extend pipe a minimum of seven inches (7") above finished roof line, except where a vandal proof hood is required in which case pipe shall extend to a height required to receive the hood and also where specifically required to exceed this dimension by the local authority due to snow conditions.

I. Installation of Plumbing Fixtures:

1. Install each fixture at the exact height and location shown on the Architectural Drawings.

2. Set fixtures, supplies, trap and trap outlet square with the wall, in line with fixture outlets without any offsets, angles, or bends.

3. Grout joint between the fixtures and the walls or floors with polysulfide or silicone sealant to be smooth, even and watertight.

4. Watertight joints for drainage connections to all fixtures shall be made in accordance with the California Plumbing Code.

J. Completion of Installation:

1. Cleaning and Flushing: Clean all equipment and materials thoroughly. Leave surface to be painted smooth and clean, ready for painting.

2. Flush each unit of water supply and distribution system thoroughly with clean water at the highest velocities attainable.

3. Clean all piping, valves, traps, fixtures and other devices thoroughly and flush or blow out until free of scale, oil silt, sand, sediment, pipe dope and foreign matter of any kind.

3.07 CUTTING & PATCHING

A. The cutting and patching of existing construction shall be coordinated in advance of the work.

B. Where required to remove, cut or core drill existing building walls, partitions, floors, ceilings and roof and outdoor paved and landscaped areas in order to install the work as indicated, the Contractor shall cut and patch existing construction to match adjacent areas in a manner that will not result in visual evidence of any cutting or patching. The materials, finishes and methods of installation shall match the existing adjacent surfaces and shall be in accordance with the requirements of other applicable sections of these specifications.

C. Unless specified on structural drawings, any alterations or modifications to a structural element by cutting, drilling, boring, bracing, welding, etc., shall have written approval by Structural Engineer of record and DSA prior to start of work.

3.08 STERILIZATION OF DOMESTIC WATER LINES

A. Sterilize water lines by filling with a solution containing fifty (50) parts of chlorine per million parts water and holding the solution therein for at least twenty-four (24) hours with a water head of at least five feet (5') above the highest point in the system. Unless otherwise directed, thoroughly flush each line prior to sterilization. Introduction of sterilizing solution or materials into the lines shall be such as to provide thorough and uniform distribution throughout the system.

B. Operate all valves during the retention period. Following retention period, the heavy chlorinated water shall be flushed from the system with clean water.

C. Continue flushing until the residual chlorine at the end of 24 hours does not exceed the chlorine residual in the flushing water.

D. All work and certification of performance must be done by an approved laboratory utilizing qualified applications and personnel.

3.09 TESTING

A. No piping work shall be concealed or covered until piping has been tested, inspected and approved by the Inspector. All piping for plumbing systems shall be completely installed and tested as required by the California Plumbing Code. Test pressures and times indicated are a minimum only. All tests shall be as required by the governing authority as well.

Schedule of Test Pressures:

System Tested	Gauge	Test	Duration
Water	100 Pounds or 1½ times working pressure whichever is greater.	Water	8 Hours
Waste, Vent &	Minimum 10 Feet of Head	Water	8 Hours

3.10 OPERATION INSTRUCTION

A. Prior to occupancy or prior to the date of final inspection, whichever may occur first, the Contractor shall prepare two (2) sets of typewritten instructions for the operation of all equipment, valves, etc., specified and furnished as a part of the work under this section, and shall assign a competent person, thoroughly familiar with the job, to demonstrate and instruct a representative of the Owner in the operation of the equipment. The time of said demonstration and instructions shall be arranged with the Owner's representative approximately one (1) week in advance. Verbal instructions shall include shut-off location of water. The Contractor shall assemble all operation and maintenance data supplied by the manufacturers of the various pieces of equipment, all keys and special wrenches required to operate and service the equipment (including keys for yard boxes, fixture stops), and all equipment warranties and deliver same to the representative of the Owner on date of said instructions.

3.11 PIPE AND EQUIPMENT IDENTIFICATION

A. Each operating and service line shut-off valve shall be identified by a 19 ga. brass tag with stamped, engraved type of service identified, complete with a hole and brass chain mounted on valve stem or handle. Tag shall be a minimum of one and one-half inch (1½ ") in diameter. The contractor shall provide valve chart (framed and mounted in Custodial Room) with size, type and location of all shutoff valves. Valves shall be numbered to match the corresponding valve tag.

B. Access Panel Markers: Provide manufacturers standard 1/16 inch thick engraved plastic laminate marker, with abbreviations and numbers corresponding to concealed valve.

C. All equipment shall be provided with name plate indicating all pertinent information on it.

D. Manufacturer's (Seton or Brandt) standard permanent, bright colored, continuous printed plastic tape, intended for all interior piping and direct-burial service, piping not less than 6 inches wide x 4 mils thick. Provide multi-ply tape consisting of solid aluminum foil core indicating type of service of buried pipe between two layers of plastic tape. The warning plastic (service identified) tape shall be placed one (1) foot above all buried pipe.

3.12 SCHEDULING OF WORK:

A. The facilities will be in operation during the entire period of construction. The Contractor shall be responsible for the proper scheduling of his work to insure that the existing mechanical systems to be replaced, modified and extended into existing utilities are kept in operation during the entire period of construction. When interrupted service are unavoidable, the Contractor shall confer with the Owner’s authorized representative to determine at what times the connections can be made to minimize the interruptions to the normal operation of the facilities.

B. Certain piping and equipment are presently insulated and asbestos compounds. The work required for this asbestos removal will be the responsibility of the Owner and shall be in full compliance with all governing authorities. The Owner shall certify that all asbestos removal has been completed prior to contractor’s start of work.

3.13 DEMOLITION

A. General: Provide all work necessary for demolition, dismantling, cutting & alterations as indicated, specified and required for completion of the work. The work shall include but not be limited to the following major items.

1. Protection of existing work to remain.
2. Disconnecting & capping sewers.
3. Removal of items as indicated on drawings.
4. Salvageable items to be retained by Owner.

B. Project Site Conditions:

1. Drawings may not indicate in detail all demolition to be carried out. Contractor shall carefully examine existing work to determine full extent of demolition required for completed work to conform to drawings and specifications.

2. Existing work to remain that is damaged during and by demolition operations shall be repaired or replaced to satisfaction of the Owner at no cost to the Owner.

3. Contractor shall be solely responsible for damage resulting from inadequate or improper support demolition procedures including dust containment.

C. Coordinate:

1. Prior to commencement of work, contact the owner's representative to confirm that all items identified to be removed are clearly marked.

2. Coordinate demolition with other trades to ensure correct sequence, limits, and methods of proposed demolition. Schedule work to create least possible inconvenience to operation of the facility.

D. Salvage: The Owner's representative shall determine with the contactor certain items that are to be kept by the Owner & these items shall be taken by the contractor to a place of storage as directed by the Owners. All other demolition items shall be removed from the premiers by the contractor.

E. Protection:

1. Do not demolition until temporary, barricades, warning signs and other forms of protection are installed.

2. Provide all safeguards, including warning signs and lights, barricades, and the like during demolition.

3. Noise, Dust and Water Controls: Containment shall be provided as required.

4. Safety: If at any time safety of exiting construction appears to be endangered, Contractor shall take immediate measures to support such endangered construction; operations and immediately notify the Owners representative.

F. Removal of Existing Plumbing, Piping, Fixtures, And Services: Contractor shall remove from site existing piping, plumbing g equipment, fixtures and services not indicated for reuse and not necessary for completion of work. Cap services to their portion of work prior to commencement of, or during work of, this section.

G. Patching: Patch materials, which are to remain when damaged by this work. Finish material and appearance of patch or repair work shall match existing contiguous materials and finishes in all respects.

H. Clean-Up/Disposal: Debris waste, and removed materials, other than items to be salvaged, are Contractor's property for legal disposal off site. Continuously clean up and remove these items and do not allow accumulating in building(s) or on site.

END OF SECTION

23 00 00

HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

LA MESA SPRING VALLEY SCHOOL DISTRICT

SECTION 23 01 00

HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS GENERAL PROVISIONS

PART 1- GENERAL

1.01 SUMMARY

A. Provide items, articles, materials, operations and methods listed, mentioned and scheduled on drawing and specifications, including labor, materials, equipment, and incidentals necessary or required for the completion, testing, inspection, adjusting, re-testing and readjusting to provide the various systems operable and complete in all respects.

B. Provide fixtures and equipment which have been listed in the Material Standards by School District.

1.02 RELATED SECTIONS

A. Section 23 20 00 Heating, Ventilating and Air Conditioning Systems
B. Section 23 07 00 Heating, Ventilating and Air Conditioning Insulation

1.03 DRAWINGS AND SPECIFICATIONS

A. Examine and become familiar with all project drawings and sections of the specifications and coordinate the work accordingly. Make reasonable modifications in the layout and installation as needed to prevent conflict with work of other trades and for proper execution of the work, without additional cost.

B. The drawings indicate approximate locations of equipment, ductwork, piping, etc., however, prior to ordering any equipment or materials, or performing any work, all dimensions, locations, and clearances shall be verified by the Contractor, based on actual field conditions, following the necessary coordination with other trades.

C. The substitutions of equipment may not be the same as that which was used as a basis for design. The term substitutions only refers to items listed in our specification that are not used as the basis of design on our drawings. Provide all necessary revisions to the installation, or work of all other trades to accommodate the substituted equipment, maintaining comparable clearances and provisions for maintenance shall be provided, with all related costs, by the Contractor. Submit substituted working drawings and submittals that have been coordinated with all other associated trades, showing the proposed installation.

D. It is the intention of the specifications and drawings to call for finished work, tested and ready for operation.

E. Where any device or part of equipment is herein referred to in the singular number, such reference shall be deemed to apply to as many such devices as are required to complete the installation or as shown.

1.04 SUBMITTALS - SHOP DRAWINGS/PRODUCT DATA/MATERIAL CERTIFICATIONS

A. Submittals shall include six copies of all shop drawings, product data and material certifications for the project. These submittals shall be sent to the School District Representative.

B. School District Representative will review the shop drawings, product data and material certifications for the project. Do not fabricate pipe, duct or order any equipment without shop drawings and product data being approved. All pipe systems, duct systems, equipment and other accessories require submittal review.

C. Shop drawings, product data and material certifications shall be complete in every respect so that a thorough review and evaluation can be performed. All required shop drawings, product data and material certifications shall be submitted at one time. Incomplete submittals, those without shop drawings, those that are not prepared properly, or submittals with less than the required number of copies, shall be returned for resubmittal.

D. It is intended that only a one-time review of all shop drawings and submittals will be performed, and any additional checking, which is required due to improper preparation by the Contractor, will be billed as an extra cost to the Contractor.

E. All shop drawings, product data and samples submitted by the Contractor shall illustrate details of work, equipment, materials, products, systems, designs or workmanship that the Contractor intends to use in order to comply with the design concept established in the contract documents. The review of these submittals is only for the limited purpose of checking the same for conformity with the design concept of the work as established in the contract documents. The review is not intended to be for the purpose of determining the accuracy of other matters that may be contained in such submittals, including but not limited to such matters as dimensions, quantities and performance of equipment. Contractor shall furnished construction means, methods, techniques, sequences, procedures or safety precautions, the correctness of which as set forth in the contract documents or submittal shall be the sole responsibility of the Contractor.

F. Only equipment, material and components of those manufacturers indicated in this specification are acceptable. Products that have not been reviewed and accepted by the School District Representative before the bidding period will not be accepted.

G. To be considered as a acceptable confirm that the alternate manufacturers' equipment or fixture is comparable with regard to such features as noise level, power requirements, metal gauges, vibration attenuation, finish, appearance, certification of recognized testing agencies and standard bureaus, allowable working pressures, physical size and arrangement. The Contractor shall also consider the effect of installation in the available space, factory-applied insulation, electrical devices, controls, access to internal parts, operating efficiencies, and all other features and capacities specified herein. The School District Representative shall be judge of the ability of any equipment, fixture or material to meet the requirements of this specification and the burden of proof shall be the responsibility of the Contractor.

H. Format: Each type of equipment, fixture or material shall be submitted in a separate section of the submittal package and each such section shall have:

I. A cover sheet identifying the equipment or fixture by the numbers or letter identical to those listed on the Drawings and/or Specifications, the manufacturer, the model number and size, and the technical data required for each piece of equipment or fixture. Materials shall be identified by system type.

J. Dimensional drawings (including optional accessories appropriate to this project).

K. Electrical data tables showing voltage, phase, horsepower (or kW), full load (or rated load) amperes and maximum fuse protection for each piece of equipment.

L. Capacity data tables (copies of catalog capacity tables) including fan curves for air moving devices.

M. Each submittal shall specifically reply to every item of equipment, fixture or material specified or scheduled. All information shall be listed on the submittal cover sheet and shall be marked in the submitted manufacturer's literature. All exceptions to the individual specifications shall be listed separately on the submittal cover sheet and shall be noted on submittal "cut sheet".

N. Shop drawings are required for the heating, ventilating and air conditioning systems. Submit one set of original drawings suitable for reproducing clear copies and provide six copies of drawings. The shop drawings will be reviewed. Contractors shall reproduce copies for their use. Shop drawings, equipment, fixture, and material submittals shall be delivered at the same time.

1.05 INVESTIGATION OF CONDITIONS

A. Where new underground trenching is required on sites or in any area where existing underground utilities exist, the contractor shall provide an independent professional utility locating service to locate exact vertical and horizontal locations of all existing utilities. Where existing utilities are found the contractor shall hand dig those areas to avoid disruption, the conductor shall be responsible for immediate repairs to existing underground utilities damage during construction. The contractor shall repair all existing asphalt, concrete and landscape surfaces damaged or removed during construction to match their original conditions. Where trenching extends through public streets or roadways, the contractor shall notify underground service alert in addition it the independent locating service before start of construction to determine location of existing utilities.

B. This project is a new building on an existing site with existing utilities and an examination of the site is mandatory.]

C. Examine the existing conditions bearing on labor, transportation, handling, and storage of materials, etc. Visit the site to understand the nature and scope of all work to be performed. The submission of a bid will be taken as evidence that such an examination has been made and all conditions have been considered.

1.06 EXISTING INSTALLATION AND CONFLICTS

A. Existing active services, water, sewer, electric, other piping systems, when encountered, shall be protected against damage due to construction work. Do not disturb operation of active services that are to remain.

B. If existing active services are encountered which require relocation, make request to the School District Representative for determination of procedures. Where existing services are to be abandoned, they shall properly terminate in conformance with requirements of the School District Representative.

C. If work makes temporary shut-downs of services unavoidable, consult with School District Representative as to dates, procedures and estimated duration of shut-down period in advance of the date work is to be performed.

D. Work shall be performed to assure that the existing operating services will be shutdown only during the time allowed and required to construct necessary connections. If a system cannot be shutdown, temporary bypass jumpers shall be installed until connections are complete.

E. Be responsible for all costs incurred by the above shut-downs, including bypass or jumper installations for work performed under Division 23.

F. If existing active utility services are encountered which require relocation, make request to School District Representative or other proper authorities for determination of procedures. Where existing services are to be abandoned, they shall properly terminated and capped.

1.07 ORGANIZATIONS

A. Below is a list of organizations that may be identified throughout the specifications by the letters in parenthesis only.

1. American Society of Heating, Refrigerating, Air Conditioning Engineers (ASHRAE)

2. American Society of Mechanical Engineers (ASME)

3. American Society for Testing and Materials (ASTM)

4. Factory Mutual Laboratories (FM)

5. National Electrical Manufacturer's Association (NEMA)

6. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

7. Underwriters' Laboratories, Inc. (UL)

8. American National Standards Institute (ANSI)

9. Air Conditioning and Refrigeration Institute (ARI)

1.08 DEFINITIONS

A. Furnish: To purchase and supply equipment, materials or components and deliver to the jobsite.

B. Install: To place, fix in position, secure, anchor, etc., including necessary appurtenances and labor so the equipment or material of the installation will function as specified and intended.

C. Provide: To furnish and install.

D. Piping: Includes, in addition to pipe, all fittings, flanges, valves, hangers, and other accessories related to such piping.

E. Concealed: Means hidden from sight in chases, furred spaces, shafts, hung ceilings, or embedded in construction.

F. Exposed: Means not installed underground or "concealed" as defined above. Tunnels, trenches, attic spaces and crawl spaces are considered exposed.

G. Accepted/Acceptable: Items, that in the opinion of the School District Representative, are acceptable alternates for the item specified.

1.09 CODE, PERMITS AND FEES

A. The drawings and specifications take precedence when they are more stringent than codes, ordinances, standards and statutes. Codes, ordinances, standards and statutes take precedence where they are more stringent than the drawings and specifications.

B. Secure and pay for permits, tests, Certifications of Inspection, and all other costs incidental to the work.

1.10 GENERAL COORDINATION OF WORK AND WORKING PROCEDURES

A. All equipment and materials shall be covered or otherwise protected from the weather, theft, etc., both when stored on the site and after installation, until final acceptance by the School District Representative. All open ends of installed piping and ductwork for partially completed systems shall temporarily be plugged and capped.

B. All materials of construction shall be new and shall bear the manufacturer's labels and trademarks.

C. The specifications indicate general requirements for the installation of all equipment and materials however, follow the specific instructions and directions furnished by the equipment or fixture manufacturer.

D. All equipment shall be installed with full consideration of future maintenance. Equipment that is installed such that it cannot be readily serviced shall be removed and installed correctly as directed to facilitate servicing.

E. Unions, valves, dampers, and other components that may require lubrication or maintenance shall be located to provide sufficient accessibility. When necessary, provide access doors as hereinafter specified at all locations where these items are concealed within walls, chases, or above ceilings which do not have an inherent accessibility feature.

F. Prior to testing and balancing of air systems, clean the interior of all duct systems and air handling equipment.

G. Surfaces to be painted shall be wiped, scraped, or wire-brushed as necessary to a clean, smooth painting surface, free from oil, rust and dirt. All material and equipment that is furnished with a factory prime coat of paint, which is damaged in transit, during storage, or from exposure to weather, shall be prime painted.

H. Contractor shall be responsible for costs related to damage caused by leaks in piping systems, or any other malfunction of the equipment, materials, systems, or work, including repairs, replacements, etc.

I. Contractor shall provide information to other Contractors relative to all required duct or pipe penetrations in walls, floors, roofs etc. The Contractor shall provide information to other Contractors relative to roof curbs. Structural work shall not be altered in any way.

J. All necessary cutting and patching of roofs, walls, floors, ceilings, etc., as required for the proper installation of the work under this section, shall be performed, and in a neat and workmanlike manner. No joists, beams, girders, columns, or other structural member shall be cut.

K. Contractor to provide all scaffolding, rigging, hoisting, and services necessary for erection and delivery into the premises for all equipment and materials, and remove same from premises when no longer required.

L. Carefully lay out work on the premises and make proper provision for the other work. The exact location of each item shall be determined by reference to the drawings, by measurements at the building, and in cooperation with other contractors. Be responsible for accurately locating all openings for ducts, pipes, etc., and all access doors required.

M. Schedule and coordinate work so as to execute expeditiously the contract and to avoid unnecessary delays.

N. Examine fully the specifications and drawings for other trades, to become familiar with all conditions affecting work, and consult and cooperate with other trades for determining space requirements and adequate clearances with respect to other equipment in the building. School District Representative shall determine space priority of the trades in the event of interference between ductwork, piping, conduit, and equipment of various trades.

O. If the work is installed without coordinating with other trades, and the installation interferes with their installation, the contractor shall make any changes necessary in this work to correct conditions without extra charge.

1.11 ELECTRIC

A. Coordinate the voltage and phase characteristics of each HVAC unit and motor with the electrical shop drawings.

B. Do not exceed electrical requirements of HVAC equipment without fully disclosing this information to the School District Representative.

C. Motors shall be suitable for non-overloading operations, regardless of operating conditions, and shall be capable of continuous operation at full nameplate rating. Motor speed shall be a maximum of 1750 RPM, unless otherwise noted.

D. Motors for belt drive shall have adjustable bases with set screw to maintain belt tension. Motor horsepower indicated on the drawing equipment schedules are the minimum size acceptable.

E. NEMA Standards shall be taken as minimum requirements for motor design and performance. Motors shall be suitable for load, duty, voltage, frequency, hazard and for service and location intended. Motors shall be high efficiency type.

F. Motors shall have name plate giving manufacturers name, shop number, HP, RPM and current characteristics. Motors for outdoor service shall be TEFC.

1.12 MOTOR STARTERS

A. Provide motor starters for all HVAC and other mechanical equipment. Provide correct size and voltage characteristics per electrical requirements. Motor starters shall be provided by Division 23 and coordinated with electrical drawings.

1.13 EQUIPMENT SUPPORTING PROVISIONS

A. Contractor shall confirm locations with School District Representative before installation of hangers, curbs, platforms, equipment frames, etc. Contractor shall coordinate all related work with other trades.

B. Equipment schedules on the drawings indicate a particular manufacturer for all equipment and the architectural and structural drawings indicate supports and other design considerations which were based on the use of this equipment.

C. Contractor shall confirm all support dimensions and locations based on the actual equipment to be installed and shall coordinate all related work with other Contractors.

D. Mechanical equipment drawing schedules indicate a particular manufacturer for equipment and the structural drawings indicate supports and other design considerations that were based on the use of this equipment. If the Contractor chooses to furnish items other than those indicated, they shall assume all responsibilities and additional costs for the furnishing and installation of the proper steel framing.

E. Where supports, foundations, stands, suspended platforms for equipment are indicated on drawings or specified in specifications design and construct supporting structures of strength to safely withstand stresses to which they may be subject and to distribute properly the load and impact over building areas. Conform to applicable technical societies' standards, also to codes and regulations of agencies having jurisdiction. Contractor shall provide sufficient supports as required. These supports are for foundations, supporting stands, platforms and they shall be connected to the building structural members. All equipment shall be bolted to supports, foundations, stands and platforms. Design of the supports, foundations, supporting stands and platforms must be approved by a California State Licensed Structural Engineer.

1.14 MACHINERY DRIVES AND ACCESSORIES

A. Belt drives: Use approved V-belts of the proper number and size, complete with the necessary grooved sheaves and other requisite accessories. Belts for motors shall be capable of not less than 20% in excess of actual motor size used on the job.

B. Belt guards: All belt drivers shall be protected with belt guards, enclosing both the driving and the driven pulleys, securely fastened in place and provided with removable covers at each shaft center. Belt guards shall comply with all code requirements.

C. Sheaves: All motor sheaves shall be of the variable pitch type unless otherwise noted. Pitch of variable pitch sheaves shall be selected at approximately 50% of the variable pitch range.

D. Provide guards for all exposed couplings on rotating equipment.

1.15 LUBRICATION

A. Lubricate as required all motors, bearings, fans, etc., before operation of any equipment.

B. Provide a final lubrication to all equipment requiring it before turning over the system to the Owner.

1.16 PIPE SLEEVES

A. Sleeves shall be schedule 40 galvanized steel pipe.

B. Pipe motion due to expansion and contraction will occur, make sleeves of sufficient diameter to permit free movement of pipe. Where pipes are insulated, make sleeves of sufficient diameter to pass pipe insulation. Check floor and wall construction and finishes to determine proper length of sleeves for various locations. Terminate sleeves flush with walls, partitions and ceiling. Extend sleeves 1/4" above finish floor, except in equipment rooms and other areas where water may accumulate on floor, extend to 1-1/2".

C. Set sleeves in ample time to permit pouring of concrete or to allow progression of other work as scheduled. Fasten sleeves securely so that they will not become displaced when concrete is poured or when other construction around them. For sleeves in fire walls, pack space between sleeve and pipe with approved non-combustible material and as otherwise required by local code; for floors where water is to be kept out, fill with graphite packing and caulking compound.

D. Sleeves in underground walls shall be 1-1/2" larger than outside diameter of pipe. The space between sleeve and pipe shall be sealed with 1" long wool and 1/2" water tight flex caulking on both sides of the wall. The seal shall be guaranteed watertight.

1.17 ESCUTCHEONS

A. Provide 20 gauge escutcheons at all pipe penetrations in walls, ceilings and floors. Escutcheons shall be one piece or hinged two piece type with positive latch or setscrew, and shall be polished chrome plated in finished rooms, and polished brass in other areas. Escutcheons shall have tempered springs or other means to insure positive attachment to pipe. The escutcheon opening shall be of sufficient diameter to fit around the insulation of insulated pipes, and the outside diameter of the escutcheon shall be of sufficient size to conceal the pipe sleeves.

1.18 EXPANSION AND FLEXIBILITY

A. Install all work with regard for expansion and contraction to prevent damage to the piping, ductwork, equipment and the building and its contents. Provide piping offsets, expansion loops, approved type expansion joints, anchors or other means to control pipe movement and to minimize pipe forces.

1.19 CORROSION PROTECTION

A. Any piping passing through concrete floors, walls or roofs shall be sleeved and wrapped 3 times with plastic foam wrap. Provide epoxy joint sealer, non-shrink, waterproof caulking around all piping risers coming up through concrete floors & sidewalks. If the floors, walls or roofs are existing then core these areas. Provide foam sealant and epoxy joint sealer (non-shrink) waterproof caulking around the space between the pipe and the floors, walls or roofs.

1.20 FIRE STOPPING

A. Provide fire stopping at all rated floors, walls or roofs. Use UL listed materials and methods for sealing these areas.

1.21 IDENTIFICATION OF EQUIPMENT

A. Each item of equipment shall be permanently labeled with a plastic nameplate of sufficient size to clearly indicate the identification designation appearing on the construction drawings. Letters shall be a minimum of 2 inches high.

1.22 GENERAL TESTING REQUIREMENTS FOR EQUIPMENT

A. The following requirements are supplementary to tests specified for individual equipment or systems in other Division 23 sections:

1. Furnish labor, materials, instruments, electric power, etc., and bear all costs in connection with these tests.

2. Give a minimum of 72 working hour notification to the School District Representative when tests will be conducted. Coordinate test with other trades.

3. After the work has been completed, subject all systems to acceptance tests under normal operating conditions for periods of 5 working days to show compliance with Contract requirements. Submit to the School District Representative a written certificate that all tests have been performed in accordance with the specification requirements.

4. All equipment, fans, and motors shall run at their required speed without showing undue vibration, objectionable noise, or sparking for a period of 5 working days.

5. Balance individual units and adjust dampers, registers, diffusers, etc., so that they deliver air quantities indicated for each outlet, and inlet, or as required.

6. Submit to the School District Representative a written certificate that all tests have been performed in accordance with the specification requirements.

B. Adjustments, repairs, and re-tests:

1. Make adjustments, repairs and alterations, as required to meet specified test results.

2. Correct defects disclosed by tests or inspections, and replace defective parts when directed.

3. In replacing defective parts, use only new materials, and in the case of pipe, replace with same length as defective piece.

4. Repeat tests after defects have been corrected and parts replaced, as directed and until pronounced satisfactory.

5. Bear the cost of repairs, and restoration of the work by other Contractors that have been damaged by the tests.

1.23 RECORD DRAWINGS

A. Maintain at the site, a set of record drawings, upon which shall be clearly indicated (by shading, coloring, or some other acceptable method) the day by day extent of the work installed. Indicate all changes to the original design at the end of each day.

B. At the completion of the construction phase, furnish to the School District Representative all necessary drawings showing work which was not installed as shown in the contract drawings. A minimum of one set of originals and three copied sets shall be furnished. Indicate all pertinent information, i.e., valve locations, pipe and duct routing (dimensionally located), etc. All underground piping shall be located on the record drawings by two or more dimensions. All elevations (inverts) shall be shown with the point of elevation change clearly located. All valves shall be numbered and lettered to correspond with the numbers and letters on the site.

1.24 EMERGENCY REPAIRS

A. The Owner reserves the right to make emergency repairs as required to keep systems in operation without relieving the Contractor of his responsibilities during the post/partial beneficial occupancy.

1.25 OPERATION BY OWNER

A. The Owner may require operation of parts or all of the respective installations prior to final acceptance. The Owner shall pay for cost of utilities for such operation. Operation of the installation shall not be construed as acceptance of the work.

1.26 INSTRUCTION MANUAL

A. Prior to completion of installation and final inspection of work, furnish to the School District Representative a minimum of three copies of complete instruction manual, bound in booklet form and indexed for each respective trade.

B. Manual shall contain the following items:

1. List of all equipment with manufacturer's name, model number and local representative, service facilities, and normal channel of supply for each item.

2. Manufacturer's literature describing each item of equipment with detailed parts list.

3. Detailed step-by-step instructions for starting, summer operation, winter operation, and shutdown of each system.

4. Detailed maintenance instructions for each system and piece of equipment.

5. Copy of each automatic control diagram with respective sequence of operations.

6. Individual equipment guarantees.

7. Certificates of inspections.

8. Copies of as-built construction and related shop-drawings.

9. All written material contained in manual shall be typewritten.

1.27 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to acceptance of work and during time designated by the School District Representative provide necessary qualified personnel to operate each system for a minimum period of two consecutive, full working days. During the two working days provide training for each system.

B. During operating period, fully instruct School District Facility Representatives in complete operations, adjustment, and maintenance of each respective installation.

1.28 GUARANTEES AND WARRANTIES

A. All work shall be guaranteed to be free from defects in material and workmanship for a period of one year from the date of final acceptance of the work, or a longer period if stipulated under specific headings. Replace at no additional cost any material or equipment developing defects and also pay for any damage caused by such defects, or the correction of defects.

B. Use warrantee terms for specific items of equipment, relative to the work guarantee requirements of this specification.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 23 05 00

TESTING, ADJUSTING, AND BALANCING FOR HVAC SYSTEMS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Testing, adjusting, and balancing of air systems.

1.02 SUBMITTALS

A. Draft Reports: Submit for review prior to final acceptance of Project.

B. Test Reports: Submit prior to final acceptance of Project and for inclusion in operating and maintenance manuals. Assemble in soft cover, letter size, 3-ring binder, with table of contents page and tabs, and cover identification. Include reduced scale drawings with air outlets and equipment identified to correspond with data sheets and indicating thermostat locations.

C. Refer to air balance notes on drawing M2.1

1.03 BALANCING AND ADJUSTING

A. This section covers testing and balancing of environmental systems including air distribution systems, and the equipment and apparatus connected thereto. The testing and balancing of all environmental systems shall be the responsibility of one Testing, Balancing and Adjusting (TBA) firm. The minimal standards to be met are those set forth in Chapter 40 in the latest edition of the ASHRAE Systems Handbook.

B. The balancing, testing and adjustments of the complete mechanical systems shall be the direct responsibility of the Contractor and he shall engage the services of an independent firm specializing in this work. The definition of independent shall mean the firm is not associated with any contracting or manufacturing firm and derives its income solely from testing, adjusting and balancing mechanical systems. Acceptable testing, adjusting and balancing firms are those which are AABC certified. NEBB firms must also be AABC certified.

C. The balancing work shall be performed by the same firm having total professional responsibility for the final testing, adjusting, and balancing of the entire system.

D. Testing and balancing work shall be directly supervised and the results confirmed by a Registered Professional Mechanical Engineer who shall represent the TBA firm in progress meetings as requested, and shall be available for interpreting all material found in the balance report.

E. The balancing firm shall provide all tools, equipment and instruments required and shall take all readings, and make all necessary adjustments.

F. After all adjustments are made, prepare a detailed written report and submit for review. Report shall bear the Registered Professional Mechanical Engineer's Stamp of the person supervising the work. Final acceptance of this project will not be made until a satisfactory report is received.

G. Verify the following conditions before proceeding with work:

1. Conduct site observations during construction to determine the location of required balancing devices and confirm that they are properly located and installed. Submit a written report of these observations to the Architect.

2. Installation of the designated system is complete and in full operation.

3. Outside temperature conditions, occupant loads, lighting loads, special equipment requiring extra sensible or ventilation requirements, and solar conditions are within a reasonable range relative to design conditions or provide for acceptable simulation of loads and conditions that will result in a properly balanced system.

H. All thermal overload protection shall be observed and noted on the data sheets. If the starter equipment is furnished and installed by the Contractor and thermal overload protection is incorrect, such information shall be tabulated, including required size thermal overloads, and included in the report. If thermal overload protection is incorrect, it shall be the responsibility of the Contractor to see that proper overload protection is installed.

I. Measure and set any special conditions such as minimum outside air quantities; check and adjust outside and return air intakes so that the system will deliver substantially the same volume on either; make tests and record data as required in the "Balancing Report" section. All balancing devices such as dampers and valves shall be clearly marked as to the final balanced position. Plug all test holes, replace access doors and belt guards.

J. Provide temperature recorders for spaces as necessary to verify acceptable space temperature conditions.

K. Upon request of the School District Representative a representative of the balancing firm performing the work shall demonstrate fluid flow quantities shown in the report by re-measuring outlets or terminals selected at random by the School District Representative to verify accuracy of settings.

L. Requirements for balancing air systems are as follows:

1. Before any adjustments are made; the major items of equipment shall have been checked to assure all bearings have proper lubrication; all belt drives shall have been adjusted for proper alignment and tension; and the systems shall have been checked for such items as dirty filters, duct leakage, filter leakage, damper leakage, equipment vibrations, correct damper operations, etc.

2. Adjust fan systems, major duct sections, registers, diffusers, etc., to deliver design air quantities within plus or minus 5%. If Individual air outlets serve more than one space, they may have a tolerance of 10% from the average. Design CFM is based on filters being approximately 50% loaded. Pressure drop across filters during balancing shall be simulated to that condition. After balancing is completed, verify that motor is not overloaded with the filters clean.

3. Check and adjust CFM settings on diffusers and grilles.

4. Adjust distribution systems to obtain uniform space temperatures free from objectionable drafts and noise within the capabilities of the system.

5. Exchange and pay for sheaves and/or belts as required to adjust the rpm of fans to handle specified air quantity.

M. Provide four copies of a "Balancing Report" to the School District Representative. The Mechanical Engineer shall review this report. This report shall contain a general information sheet listing instruments used, method of balancing, altitude correction

calculations, manufacturer's grille, register, and diffuser data. Report shall contain the following additional data.

1. Equipment data sheets listing make, size, serial number, rating, operating data, etc., of all mechanical equipment including fans, motors, starters, and drives. Operating data shall include rotational speed, inlet and outlet pressures, pressure drop across filters, coils and other system components, and measured motor current and voltage.

2. Balancing data sheets listing the required and actual CFM of all exhaust outlets or inlets, and totals summarized by systems.

3. A reduced set of contract drawings with outlets marked thereon for easy identification of the designation used in the data sheets.

4. Listing of any abnormal or notable conditions not covered in the above.

N. Even though it is the responsibility of the balancing firm to check the physical operation of each operating piece of equipment, the control contractor must assure the balancing firm that all controls are accurately calibrated and must cooperate with him during the balancing work period.

O. The agency performing the system balance and performance test, shall personally verify that all system control functions and interlocking do in fact provide the desired results as stated. The agency shall provide a written statement within the air balance report verifying this fact.

PART 2 – PRODUCTS
(NOT APPLICABLE)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Before starting work, verify systems are complete and operable.

B. Report defects, deficiencies, or abnormal conditions in mechanical systems preventing system balance.

C. Beginning of work means acceptance of existing conditions.

3.02 INSTALLATION TOLERANCES

A. Exhaust Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.

B. Air Inlets: Adjust to within plus or minus 10 percent of design.

3.03 AIR SYSTEM PROCEDURE

A. Adjust exhaust fan and distribution systems to deliver design exhaust air quantities within previously stated tolerances.

B. Make air quantity measurements in ducts by traverse of entire cross sectional area of duct.

C. Measure air quantities at air inlets.

D. Use volume control devices to regulate air quantities only to extent those adjustments do not create objectionable air motion or sound levels. Change volume using dampers mounted in ducts.

E. Vary total system air quantities by adjustment of fan speeds. Provide drive changes to accomplish system air flow. Vary branch air quantities by damper regulation.

F. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Allow for pressure drop equivalent to 50 percent loading of filters.

G. Adjust exhaust air dampers for design conditions.

H. Measure conditions and adjust dampers to check leakage.

3.04 FIELD QUALITY CONTROL

A. Verify recorded data represents actually measured or observed conditions.

B. Permanently mark settings of valves, dampers, and other adjustment devices. Set and lock memory stops.

END OF SECTION

SECTION 23 20 00

HEATING VENTILATING AND AIR CONDITIONING SYSTEMS

PART 1- GENERAL

1.01 SUMMARY

A. Work under this section provides materials and equipment related to Heating, Air Conditioning and Refrigeration systems.

B. Provide complete Mechanical Submittals and Shop drawings. Refer to Section Heating Ventilating and Air Conditioning System General Provisions 23 01 00 paragraph 1.4 Submittals - Shop Drawings/Product Data/Material Certifications.

1.02 RELATED SECTIONS

A. Section 23 01 00 - Heating Ventilating and Air Conditioning Systems General Provisions.

1.03 DEFINITIONS

A. Ductwork Sizes: Inside clear dimensions. For acoustically lined and internally insulated ductwork, maintain ductwork sizes inside lining or insulation.

B. Low Pressure: Static pressure in duct 2" water gauge or less, velocity 2000 fpm or less.

1.04 EQUIPMENT AND COMPONENTS REVIEW

A. Only equipment and components from those manufacturers indicated in this specification are acceptable.

B. Products from manufacturers which have not previously been thoroughly reviewed and accepted by the School District Representative before the bidding period will not be considered.

1.05 SUBMITTALS

A. Comply with specification Section 23 01 00 General Provisions for Heating Ventilating and Air Conditioning Systems.

B. Require Completed Submittals

1. Duct work fittings and accessories.
2. Sealant.
3. Grilles, registers, and diffusers.
4. Exhaust fans.

C. Required Shop Drawings

1. Routing of all duct systems.
2. Equipment layout.

PART 2 - PRODUCTS

2.01 DUCT SEALANT

A. Acceptable manufacturers are Ductmate® Industries – PROseal® and FIBERseal®; and Hardcast, Inc – Sealing System.

B. Metal to Metal - Duct sealer shall be flexible and self-curing and comply with UL 723 and UL 181B.

C. Sealant shall have a flame spread less than 25 and the smoke developed less than 50 when dry.

2.02 TURNING VANES

A. Acceptable manufacturers are Tuttle & Bailey, Invensys Eurotherm (Barber-Colman) and AeroDyne Research.

B. Turning vanes shall be double-walled stainless steel and formed to assure that any point on one blade is equidistant from the same point on an adjacent blade.

2.03 BACKDRAFT DAMPERS

A. Gravity backdraft dampers shall be fabricated multi-blade, parallel action, gravity balanced backdraft dampers of galvanized steel or extruded aluminum, with center pivoted blades linked together; with sealed edges, steel ball bearings, and a plated steel pivot pin.

2.04 GRILLES, REGISTERS AND DIFFUSERS

A. Acceptable manufacturers are Price, Krueger or Titus.

B. All units must be factory finished. Provide white color finish. Unit ratings shall be approved by ADC.

C. Air flow tests and sound level measurement shall be made in accordance with applicable ADC equipment test codes and ASHRAE standards. Manufacturer shall certify catalogued performances and ensure correct application of air outlet types.

D. Positions indicated are approximate only. Check location of exhaust grilles and make necessary adjustments in position to conform architectural features, symmetry and lighting arrangement. See architectural reflected ceiling plans and interior elevations for additional information.

E. Provide splay wires from air distribution to structural building members. Splay wires are used for seismic restraint and shall be attached at each corner with a minimum of 4 splays for each grill.

F. For dry wall ceilings use "Rapid Mount" frames for access to volume dampers and other items.

G. Exhaust Air Distribution - Provide the sizes listed on the drawings.

2.05 VOLUME CONTROL DAMPERS

A. Acceptable manufacturers are Penn Barry, Metal Form Manufacturing Co. and Duro Dyne Corp.

B. Provide tight close-off dampers at locations indicated on drawings or as needed for control of the air distribution system.

C. Dampers shall have air loss (leakage), when closed, less than 1% of the full flow rate (based on approach velocity of 2,000 fpm) with a pressure differential across damper 4" static pressure or less.

D. Construction shall be stainless steel.

2.06 EXHAUST FANS AND ACCESSORIES

A. Acceptable manufacturers are Greenheck, Loren Cook Co., or Penn Barry. Exhaust fans shall meet AMCA standards.

B. Provide a custom pitched roof curb for all roof mounted gravity ventilators associated with exhaust fans. The roof curb shall be a single type pitched curb with the slope of the roof curb field measured. The roof curb shall be supported by roof structural support members. Align the roof curb with these support members. The roof curb shall provide a level surface for the installation of the gravity ventilators.

C. Arrangement and configuration as indicated on drawings and as described on the equipment schedule. Performance shall be certified in accordance with Air Conditioning and Refrigeration Institute (ARI) Standard for rooftop HVAC units. Fans to be rated by AMCA.

D. Exhaust fan motors that are 115-volt, 1 phase.

PART 3 – EXECUTION

3.01 DUCT CONSTRUCTION AND INSTALLATION

A. Ductwork shall be seamless welded stainless steel same, for type refer to food service construction documents. Air leakage and details not specifically shown on the drawings shall be in accordance with SMACNA Publication HVAC Duct Construction Standards - Meal and Flexible current edition and SMACNA Publication Seismic Restraint Manual: Guidelines for Mechanical Systems current edition.

B. Radius elbows shall have a center line radius equal to 1-1/2 times the duct width. Square throats will not be permitted on radius elbows. Square elbows shall have double thick turning vanes. Job fabricated turning vanes will not be accepted without prior approval.

C. Provide all necessary stainless-steel dampers as required for proper adjustment and control of air distribution. All dampers shall have rigid bearings and locking quadrants which allow no rattling. All damper rods shall be marked to indicate the relative position of the damper blade with respect to the rod.

D. At all places where inside of duct will be visible through exhaust air grilles, louvers, etc., paint normally visible inside portion of duct with flat black paint.

E. Transitions in ductwork, in changing shapes and sizes, shall be made with angles not exceeding 15º wherever possible. Maximum divergence upstream of equipment shall be 30º and maximum convergence downstream shall be 45º.

F. Contractor shall not provide holes in the duct systems for the installation of hangers, conduits, etc. Coordinate work of all other trades so this will not be necessary.

G. Ensure that interior of ducting is kept clean during building construction. Install plastic film over exposed duct openings as soon as ducts are installed.

H. Locate duct with sufficient space around equipment to allow normal operating and maintenance activities.

I. Construct tees, bends and elbows with radius of not less than 1-1/2 times width of duct on center line. Where not possible and where rectangular elbows are used, provide approved type airfoil turning vanes.

3.02 DUCTWORK TESTING

A. Leak test exhaust air ductwork during construction and prior to installation. Leakage shall not exceed of 1% of the total design CFM when tested at 1-1/2 times the design air pressure or the minimum requirement as set forth by SMACNA HVAC Duct Construction Standards. Notify School District Representative 24 hours in advance of test. Keep field records of tests and submit to Architect Mechanical Engineer Owner's Representative three copies of results.

B. Retesting: Retest ductwork failing initial tests following correction of defective work. Requirements of initial tests shall apply.

END OF SECTION

LA MESA ART ACADEMY

LA MESA SPRING VALLEY S.D.

DISHWASHER APPLIANCE REPLACEMENT

4200 PARKS AVE., LA MESA, CA 91941

SUPERINTENDENT: DAVID FELICIANO.

GOVERNING BOARD MEMBERS:
PRESIDENT: **REBECCA MCRAE**
VICE PRESIDENT: **CHARDA BELL-FONTENOT**
CLERK: **MEGAN EPPERSON**
MEMBER: **MINERVA MARTINEZ SCOTT**
MEMBER: **SARAHI RHILEY**

EXECUTIVE DIRECTOR OF MAINTENANCE AND OPERATIONS: CHRISTINA BECKER

SYMBOL LEGEND

BUILDING SECTION REFERENCE — 1 / A2.8 — SECTION NUMBER / SHEET NUMBER
DETAIL SECTION REFERENCE — 4 / A5.1 — DETAIL NUMBER / SHEET NUMBER
OPENING REFERENCE — 101 — OPENING NUMBER
DEMOLITION KEY NOTE REFERENCE — 3 — KEY NOTE NUMBER
KEY NOTE REFERENCE — 1 — KEY NOTE NUMBER
EXTERIOR ELEVATION REFERENCE — 3 / A3.1 — ELEVATION NUMBER / SHEET NUMBER
COLUMN LINE REFERENCE — A3 — COLUMN LINE LETTER/NUMBER
ROOM NAME IDENTIFICATION — OFFICE / A120 — ROOM NAME / ROOM NUMBER
INTERIOR ELEVATION REFERENCE — 3 / A4.1 — NUMBER ON ELEVATION SHEET / INTERIOR ELEVATION SHEET NUMBER
TARGET ELEVATION REFERENCE — 1'-2" T.O.CURB — TARGET ELEVATION / REFERENCE TO ELEVATION
EQUIPMENT IDENTIFICATION REFERENCE — 1 — EQUIPMENT / ACCESSORY NUMBER
BUILDING SIGN REFERENCE — 2A — SIGN NUMBER

SCOPE OF WORK

REPLACEMENT OF DISHWASHER APPLIANCE INCLUDING ELECTRICAL AND PLUMBING WORK AS NEEDED. REMOVE AND REPLACE EXAUST FAN.

ABBREVIATIONS

@	at	GA	gage, gauge	R	riser		
S.T.M.	American Society for Testing and Materials	GB	grab bar	RAD	radius		
		GBR	grade beam	RAR	return air register		
A/C	air conditioning	GC	general contractor	RB	rubber base		
ANC	anchor bolt	GCMU	glass concrete masonry units	RCB	rubber carpet base		
ABV	above	GD	gutter drain	RD	roof drain		
ACOUST	acoustical	GI	galvanized iron	RDWD	redwood		
ACP	acoustic ceiling panel	GLB	glued laminated beam	REF	reference		
ACP	asphaltic concrete paving	GPL	gypsum plaster	REFL	reflected) (ed),(or)		
ACT	acoustical tile	GR	grade	REFR	refrigerator		
ADD	addendum	GRT	grout	REINF	reinforcing		
ADD	addendum	GV	gravity vent	REINF	reinforced (concrete pipe)		
ADJ	adjacent	GWB	gypsum drywall	RES	resilient		
ADJUST	adjustable	GWG	gypsum drywall water-resistant	RET	return		
AFF	above finished floor	GWX	gypsum drywall type X	REV	revision		
AGGR	aggregate	GYP	gypsum	RFG	roofing		
ALT	alternate			RFND	recessed feminine napkin		
ALUM	aluminum	HB	hose bibb		disposal		
ANOD	anodized	HC	hollow core	RFNS	recessed feminine napkin		
AP	access panel	HDBD	hardboard		dispenser		
APPROX	approximate	HDR	header	RH	roof hatch		
ARCH	architect(ural)	HDW	hardware	RHB	recessed hose bibb		
AUTO	automatic	HDWD	hardwood	RL	roof line		
		HEX	hexagonal	RL	roof ladder		
BD	board	HM	hollow metal	RM	room		
BEL	below	HORIZ	horizontal	RO	rough opening		
BIT	bituminous	HP	high point	ROD	roof overflow drain		
BITUM	bituminous	HR	hour	RPC	rubber pad		
BLK	block	HT	height	RPTD	recessed paper towel dispenser		
BLKG	blocking	HTG	heating	RPTR	recessed paper towel receptacle		
BM	bench mark	HVAC	heating, ventilating, and air conditioning		/disposal		
BOT	bottom	HWH	hot water heater	RSCD	recessed seat cover dispenser		
BP	blank panel			RTPD	recessed toilet paper dispenser		
BRG	bearing	I.C.B.O.	International Conference of Building Officials	RTSB	rubber topset base		
BSMT	basement	ID	inside diameter	RWC	rainwater conductor		
BSMT	basement	IN	inch				
BTWN	between	INCL	include(d),(ing)	S	South		
BUR	built-up roofing	INSUL	insulate(d),(ing)	S.F.M.	State Fire Marshal		
BW	both ways	INT	interior	S.Y.	square yard		
		IPS	iron pipe size	SA	supply air register		
C.A.C.	California Administrative Code			SC	solid core		
C.B.C.	California Building Code	JC	janitor's closet	SCB	sheet cove base		
C.C.R.	California Code of Regulations	JST	joist	SCH	schedule		
C.F.	cubic foot	JT	joint	SD	storm drain		
C.O.	conduit only			SECT	section		
CAB	cabinet	KIT	kitchen	SFGL	safety glass		
CADMT	cadmium	KO	knockout	SH	shelf		
CAD	cadmium	KS	knee space	SHTG	sheathing		
CB	catch basin			SIM	similar		
CDS	Casework Design Series	L	length	SKYLT	skylight		
CEM	cement	LP.G.	liquified propane gas	SNT	sealant		
CER	ceramic	LAM	laminate	SPEC	specification(s)		
CGF	ceramic granule flooring	LAM	laminate(d)	SQ	square		
CHBD	chalkboard	LAV	lavatory	SS	service sink		
CI	cast iron	LB	lag bolt	SS	stainless steel		
CIPC	cast-in-place concrete	LBL	label	STA	station		
CJ	control joint	LL	live load	STC	sound transmission coefficient		
CL	centerline	LT	light	STD	standard		
CLF	chain link fence	LT.WT.	lightweight	STL	steel		
CLG	ceiling	LVR	louver	STOR	storage		
CLOS	closet			STR	structural		
CMT	ceramic mosaic (tile)	M	modified	SUSP	suspended		
CMU	concrete masonry unit	MAS	masonry	SYST	system		
COL	column	MATL	material(s)				
COMB	combination	MAX	maximum	T	tread		
COMPO	composition	MB	machine bolt	TAC	tectum acoustic panel		
COMPT	compartment	MC	medicine cabinet	TEL	telephone		
CONC	concrete	MECH	mechanic(al)	THK	thick(ness)		
CONN	connection (or)	MEZZ	mezzanine	TIG	tungsten inert eliminated beam		
CONST	construction	MFR(S)	manufacture(rs)	TOP	top of parapet		
CONT	continuous or continue	MH	manhole	TOS	top of sheathing		
CONTR	contractor(or)	MIN	minimum	TOW	top of wall		
CORRUG	corrugated	MIR	mirror	TP	top of plywood		
CPT	carpet	MISC	miscellaneous	TPD	toilet paper dispenser		
CRS	course(s)	MO	masonry opening	TPTN	toilet partition		
CS	countersink	MOD	modular	TR	transom		
CT	ceramic tile	MOD.BIT.	modified bitumen	TS	top of steel		
CTR	counter	MOLD	molding, moulding	TSCD	toilet seat cover dispenser		
CTSK	countersink screw	MTD	mount(ed)	TV	television		
CUST	custodian	MTG	mount(ing)	TYP	typical		
CWP	carpet with pad	MTL	metal				
		MULL	mullion	U.B.C.	Uniform Building Code		
DBL.ACT.	double acting	MWP	membrane waterproofing	U.L.	Underwriters' Laboratory		
DEMO	demolish, demolition			U.N.O.	unless noted otherwise		
DET	detail	N	North	UC	undercut		
DF	draining fountain	NAT	natural	UNFIN	unfinished		
DH	double hung	NIC	not in contract	UR	urinal		
DIM	dimension	NOM	nominal				
DL	dead load	NR	noise reduction	VAR	varies		
DN	down	NRC	noise reduction coefficient	VB	vapor barrier		
DPNR	dampproofing			VCR	video cassette recorder/player		
DR	door	OBL	oblique	VCT	vinyl composition tile		
DS	downspout	O/C	on center(s)	VERT	vertical		
DSA	Division of the State Architect	OD	outside diameter	VEST	vestibule		
DTL	detail(ed)	OFCI	owner furnish	VIF	verify in fabric		
DTL	detail	OFD	overflow scupper	VG	vertical grain		
DTS	dovetail anchor slot	OH	overhead	VPL	veneer plaster		
DW	drywall	OPG	opening	VS	vent stack		
DWG	drawing	OPP	opposite	VTS	vinyl wrapped tack surface		
DWR	drawer	OSA	Office of the State Architect	VWC	vinyl wall covering		
E	East	PA	public address system	W	West		
EA	each	PAR	parallel	W	width, wide		
EB	expansion bolt	PART.BD.	particle board	WI	Woodwork Institute		
EC	evaporative cooler	PCC	pre-cast concrete	W/	with		
EF	each face	PCF	pounds per cubic foot	W/O	without		
EFCI	electric clothes dryer	PL.PLAS.	plaster, cement plaster	WC	water closet		
EJ	expansion joint	PN	panic hardware	WC	water closet		
EL	elevation	PKG	parking	WD	wood		
ELEC	electric(al)	PL	property line	WDW	window		
ELEV	elevation	PL	plate	WG	wired glass		
EMERG	emergency	PL.GL.	plate glass	WH	wallhung		
EMT	electrical metallic conduit	PLAM	plastic laminate	WI	wrought iron		
ENCL	enclosure	PLAS	plaster	WJ	weatherproof plane joint		
EP	electrical panelboard	PLF	pounds per lineal foot	WKTP	walk top		
EQ	equal	PLYD	plywood	WP	waterproofing		
EQUIP	equipment	PNL	panel	WPT	working point		
EST	estimate	PNT	paint(ed)	WR	water repellent		
EW	each way	PR	pair, paired	WSCT	wainscot		
EWC	electric water cooler	PSF	pounds per square foot	WT	weight		
EXH	exhaust	PSI	pounds per square inch	WTR	water		
(E)	existing	PT	paint	WTW	wall to wall		
EXP	exposed	PTD	painted				
EXT	exterior	PTDT	paper towel dispenser	X	factory finish		
		PTFP	pressure treated douglas fir	XG	existing grade		
FB	face brick	PTN	partition				
FBD	fiberboard	PTG	glass paint	YD	yard		
FBO	furnished by others	PTR	paper towel receptacle				
FD	floor drain	PTS	semi-gloss paint				
FDN	foundation	PVC	polyvinyl chloride				
FE	fire extinguisher	PVMT	pavement				
FEC	fire extinguisher cabinet	PWJ	plywood web joist				
FF	finish floor						
FFE	finished floor elevation	QT	quarry tile				
FGL	fiberglass						
FH	fire hydrant						
FHC	fire hose cabinet						
FHMS	flathead machine screw						
FHWS	flathead wood screw						
FIN	finish(ed)						
FIN FLR	finished floor line						
FL	flow line						
FLASH	flashing						
FLUR	fluorescent						
FND	feminine napkin disposal						
FOC	face of concrete						
FOF	face of finish						
FOM	face of masonry						
FOS	face of studs						
FP	fireproof						
FRM(G)	frame(d),(ing)						
FRT	fire-retardant						
FTG	footing						
FTG	footing						
FUR	furred(ing)						
FUT	future						
FV	field verify						
FWP	fabric-wrapped acoustic panel						

GENERAL NOTES

1. ACCESSIBILITY: THE SITE AND ALL BUILDINGS SHALL BE ACCESSIBLE TO PERSONS WITH DISABILITIES IN COMPLIANCE WITH TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS AND THE ACCESSIBILITY GUIDELINES OF THE AMERICANS WITH DISABILITIES ACT OF 2010. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO PROVIDE ACCESS TO PERSONS WITH DISABILITIES.

2. COORDINATION AND CLARITY: FOR THE CLARITY OF SEPARATE ITEMS OF WORK, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, CIVIL AND LANDSCAPING ITEMS MAY NOT APPEAR ON THE ARCHITECTURAL DRAWINGS. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO COMPLEMENT EACH OTHER, AND WHAT IS REQUIRED BY ONE SHALL BE REQUIRED BY ALL.

3. JOB SITE OBSERVATIONS: THE ARCHITECT AND CONSULTANT ENGINEERS WILL MAKE VISITS TO THE JOB SITE TO OBSERVE THE WORK TO DETERMINE, IN GENERAL, IF THE WORK IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN COMPLETED, WILL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE JOB SITE OBSERVATIONS BY THE ARCHITECT AND CONSULTING ENGINEERS DO NOT RELIEVE THE CONTRACTOR OF ANY OF HIS RESPONSIBILITY. THE JOB SITE OBSERVATIONS BY THE ARCHITECT AND CONSULTING ENGINEERS DO NOT IN ANY WAY MEAN THAT THE ARCHITECT OR ENGINEER IS A GUARANTOR OF THE CONTRACTORS WORK, IN CONTROL OF THE SAFETY IN, ON, OR ABOUT THE JOB SITE; IN CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENT, SCAFFOLDING, FORMS, OR OTHER WORK AIDS; OR SUPERINTENDING OF THE WORK.

4. DEFECTS IN THE WORK: IF THE ARCHITECT OR CONSULTING ENGINEERS FIND DEFECTS IN THE WORK, THEY WILL NOTIFY THE CONTRACTOR SO THAT THE DEFECT MAY BE CORRECTED. IT IS NOT THE INTENT , UNDER ANY CIRCUMSTANCES, FOR THE ARCHITECT OR CONSULTING ENGINEER TO BECOME A GUARANTOR OF THE CONTRACTOR'S PERFORMANCE BY THESE ACTIVITIES. THE FACT THAT A CONSTRUCTION DEFECT OR ERROR GOES UNDETECTED DURING A JOB SITE VISIT SHALL NOT MAKE THE CORRECTION OF CONSTRUCTION DEFECTS AND ERRORS IN THE WORK, AND THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES AND THE SAFETY PRECAUTIONS REQUIRED FOR COMPLETING THE WORK AS INDICATED BY THE CONTRACT DOCUMENTS.

5. EXISTING UTILITIES: THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, IF SHOWN ON THE DRAWINGS, ARE SHOWN IN AN APPROXIMATE WAY ONLY, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE DISTRICT OR ITS REPRESENTATIVE.
THE ARCHITECT AND HIS CONSULTING ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES, WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED UNDER THIS OR ANY OTHER CONTRACTS.
PRIOR TO ANY EXCAVATION UNDER THIS CONTRACT, THE CONTRACTOR SHALL:
A. REQUEST FROM THE OWNER ALL AVAILABLE RECORD DRAWINGS OF THE AREAS COVERED BY THE WORK.
B. ARRANGE AND CONDUCT A MEETING WITH THE DISTRICT'S REPRESENTATIVE TO CONDUCT A SITE REVIEW OF POTENTIAL UTILITY LOCATIONS WITH THE DISTRICT'S MAINTENANCE STAFF.
C. THE CONTRACTOR SHALL OBTAIN AND PAY FOR THE SERVICES OF A PRIVATE UTILITY LOCATING SERVICE, WHICH SHALL, BASED ON INFORMATION OBTAINED FROM THE ABOVE RESOURCES, AND FROM THE TOPOGRAPHIC SURVEY AND THE PRESENCE OF VISIBLE FACILITIES SUCH AS BUILDINGS, METERS, JUNCTION BOXES, PIPES LEAVING BUILDINGS, CATCH BASINS, CLEANOUTS, SPRINKLER HEADS, VALVES, ETC., LOCATE AND MARK ALL EXISTING UNDERGROUND UTILITY LINES.
D. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA 1800.422.4133. AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, AND SHALL NOT EXCAVATE UNTIL VERIFICATION FROM UNDERGROUND SERVICE ALERT THAT ALL PUBLIC UTILITIES SERVING THE SITE HAVE LOCATED AND MARKED THEIR UNDERGROUND SERVICES.

THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING UNDERGROUND UTILITIES, AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

6. SHOULD UNIDENTIFIED UTILITIES BE DISCOVERED BY THE CONTRACTOR IN THE COURSE OF THE WORK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DISTRICT, AND SHALL UNDERTAKE WHATEVER EMERGENCY PROCEDURES HE DEEMS NECESSARY TO PROTECT PEOPLE AND PROPERTY. THE DISTRICT SHALL REIMBURSE THE CONTRACTOR FOR THE COST OF SUCH REPAIRS, IN ACCORDANCE WITH THE GENERAL CONDITIONS.

7. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN THE ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 C.C.R.; SEE DESCRIPTION BELOW.

8. ADDENDA: CHANGES OR ALTERATIONS OF THE APPROVED PLANS OR SPECIFICATIONS PRIOR TO EDITING A CONSTRUCTION CONTRACT FOR THE WORK INVOLVED SHALL BE MADE BY MEANS OF ADDENDA. ADDENDA SHALL BE MANUALLY SIGNED BY THE ARCHITECT OR ENGINEER IN GENERAL RESPONSIBLE CHARGE OF PREPARATION OF THE PLANS AND SPECIFICATIONS AND BY THE ARCHITECT OR ENGINEER DELEGATED RESPONSIBILITY FOR THE PORTION AFFECTED BY THE ADDENDA AND SHALL BE APPROVED BY THE DIVISION OF THE STATE ARCHITECT. ONE COPY IS REQUIRED FOR THE FILES OF THE DIVISION OF THE STATE ARCHITECT.

9. CONSTRUCTION CHANGE DIRECTIVES: CHANGES OR ALTERATIONS OF THE APPROVED PLANS OR SPECIFICATIONS AFTER A CONTRACT FOR THE WORK HAS BEEN LET SHALL BE MADE BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT (CCD). CCDs SHALL STATE THE REASON FOR THE CHANGE AND SHALL BE ACCOMPANIED BY SUPPLEMENTARY DRAWINGS WHERE NECESSARY. ALL CCDs SHALL BE MANUALLY SIGNED BY THE ARCHITECT OR ENGINEER IN GENERAL RESPONSIBLE CHARGE OF OBSERVATION OF THE WORK OF CONSTRUCTION OF THE PROJECT AND BY THE ARCHITECT OR REGISTERED ENGINEER DELEGATED RESPONSIBILITY FOR OBSERVATION OF THE PORTION OF THE WORK OF CONSTRUCTION AFFECTED BY THE CCD AND SHALL BEAR THE APPROVAL OF THE SCHOOL BOARD AND THE DIVISION OF THE STATE ARCHITECT. ONE COPY OF EACH CCD IS REQUIRED FOR THE FILES OF THE DIVISION OF THE STATE ARCHITECT.

10. FIRE SAFETY: SEE C.F.C. CHAPTER 33 FOR FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

11. A PROJECT INSPECTOR EMPLOYED BY ***LA MESA SPRING VALLEY*** SCHOOL DISTRICT, APPROVED BY DSA, IN ACCORDANCE WITH THE REQUIREMENTS OR STATE OF CALIFORNIA BUILDING CODE, TITLE 24, PART1, AND QUALIFIED IN ACCORDANCE WITH DIVISION OF STATE ARCHITECT WILL BE ASSIGNED TO THE WORK. HIS DUTIES ARE SPECIFICALLY DEFINED IN TITLE 24, PART 1, SECTION 4-342. SEE SPECIFICATION FOR COMPLETE LISTING OF DUTIES.

CLASSIFICATION TO BE "CLASS 3" AND CERTIFIED BY THE DIVISION OF THE STATE ARCHITECT.

12. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

13. ALL WORK SHALL CONFORM TO 2019 EDITION OF TITLE 24, CALIFORNIA CODE OF REGULATIONS (C.C.R.)

14. UNLESS SPECIFIED ON STRUCTURAL DRAWINGS, ANY ALTERATIONS OF MODIFICATIONS TO A STRUCTURAL ELEMENT BY CUTTING, DRILLING, BORING, BRACING, WELDING, ETC. SHALL HAVE WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD AND D.S.A. PRIOR TO STARTING WORK.

15. FIRE BLOCKING AND DRAFT STOPS SHALL BE PROVIDED IN ACCORDANCE WITH CBC SECTION 708

16. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT

17. CONTRACTOR OPERATIONS SHALL NOT BLOCK, HINDER, IMPEDE OR OTHERWISE INHIBIT THE USE OF REQUIRED EXITS AT ANY TIME. CONTRACTOR SHALL MAINTAIN UNOBSTRUCTED ACCESS TO FIRE EXTINGUISHERS, FIRE HYDRANTS, TEMPORARY FIRE PROTECTION FACILITIES, STAIRWAYS AND OTHER ACCESS ROUTES FOR FIRE-FIGHTING EQUIPMENT OR PERSONNEL

APPLICABLE CODES

ALL WORK ON THIS PROJECT SHALL COMPLY WITH THE CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 19, AND THE FOLLOWING PARTS OF TITLE 24:

LIST OF APPLICABLE CODES

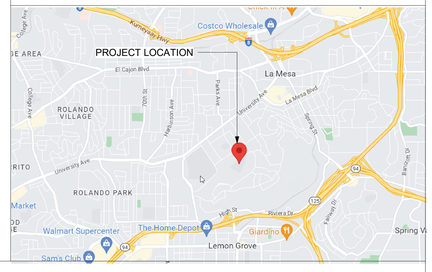
- ■2022 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 CCR
- ■2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
- ■2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
- ■2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
- ■2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
- ■2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
- ■2019 CALIFORNIA FIRE CODE, PART 9, TITLE 24 CCR
- ■2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGreen), PART 11, TITLE 24 CCR
- ■2019 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

PARTIAL LIST OF APPLICABLE NFPA STANDARDS

NFPA 13	AUTOMATIC SPRINKLER SYSTEMS	2016 EDITION
NFPA 14	STANDPIPE AND HOSE SYSTEMS	2016 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 17A	WET CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 20	STATIONARY PUMPS FOR FIRE PROTECTION	2016 EDITION
NFPA 22	WATER TANKS FOR PRIVATE FIRE PROTECTION	2013 EDITION
NFPA 24	PRIVATE FIRE MAINS & THEIR APPURTENANCES	2016 EDITION
NFPA 25	STANDARD FOR INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS	2013 EDITION
NFPA 72	NATIONAL FIRE ALARM & SIGNALING CODE	2016 EDITION
NFPA 80	FIRE DOOR AND OTHER OPENING PROTECTIVES	2016 EDITION
NFPA 2001	CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2015 EDITION
UL 300	FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF RESTAURANT COOKING AREAS	2005 EDITION
UL 464	AUDIBLE SIGNAL APPLIANCES	2003 EDITION
UL 521	HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS	1999 EDITION

REFERENCE CODE SECTION FOR NFPA STANDARDS - 2019 CBC (SFM) CHAPTER 35.
SEE CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO NFPA STANDARDS.

VICINITY MAP



CONSULTANTS

KITCHEN DESIGNER:
ORNESS DESIGN GROUP, INC.
595 MIRA MESA BLVD STE H,
SAN DIEGO, CA 92121
OFFICE: (858) 457-5955

ELECTRICAL ENGINEER:
JOHNSON CONSULTING ENGINEERS, INC.
12875 BROOKPRINTER PLACE, SUITE 300
POWAY, CA 92064
OFFICE: (858) 679-4030

MECHANICAL ENGINEER:
PMPE CONSULTANTS
5755 OBERLIN DRIVE, SUITE 102
SAN DIEGO, CA 92121
OFFICE: (858) 642-0800

INDEX OF DRAWINGS

Revision | Date

Consultant

Engineer

studiowc ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 201, Encinitas, California 92024
Telephone: (760)753-6800 Fax: (760)452-7541

Architect

LA MESA ART ACADEMY
DISHWASHER APPLIANCE
REPLACEMENT
LA MESA SPRING VALLEY S.D.

TITLESHEET

Author

Checker

Job:

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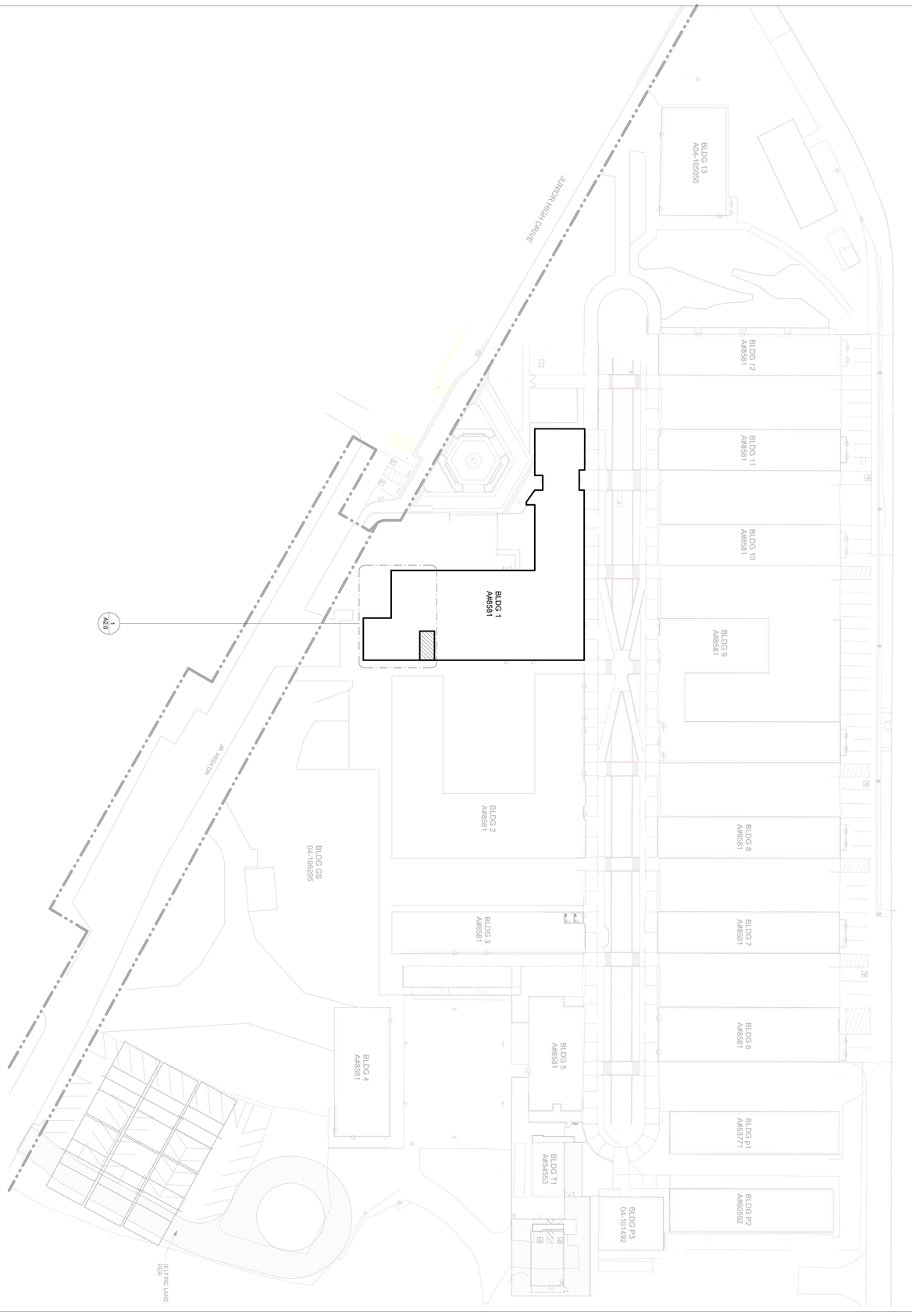

LEGEND

AREA OF SCOPE OF WORK

OVERALL SITE PLAN

LA MESA ART ACADEMY

DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

A0.1

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studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 201, Encinitas, California 92024
Telephone: (760)753-6800 Fax: (760)452-7541

Engineer

Consultant

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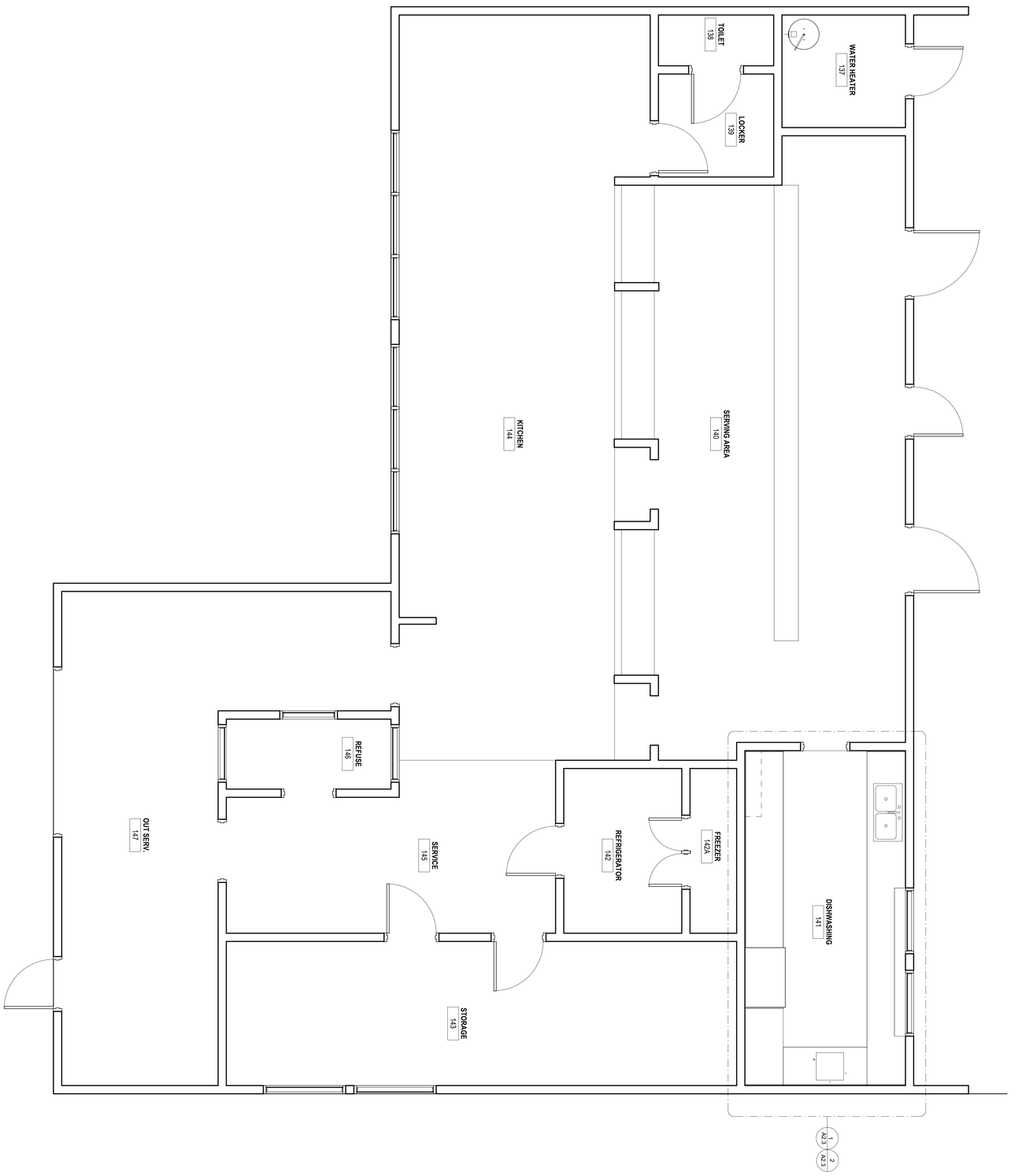

ENLARGED FLOOR PLAN BLDG 1

3/8" = 1'-0"

1

A2.0

Job:

Date:
Author:
Checker:
Date:

OVERALL FLOOR PLAN

LA MESA ART ACADEMY

DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 201, Encinitas, California 92024
Telephone: (760)753-6800 Fax: (760)452-7541

Engineer

Consultant

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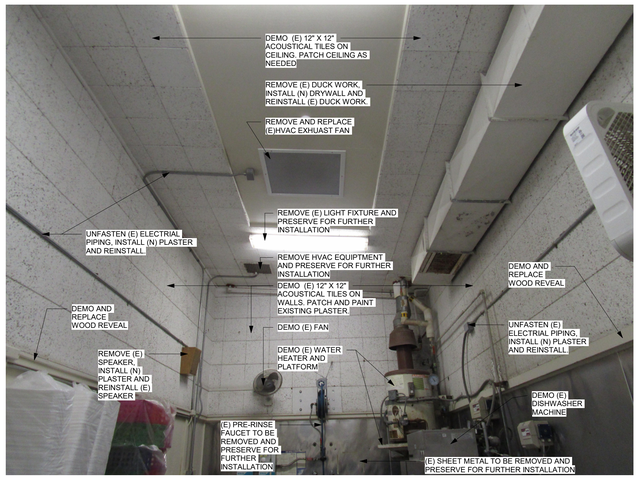
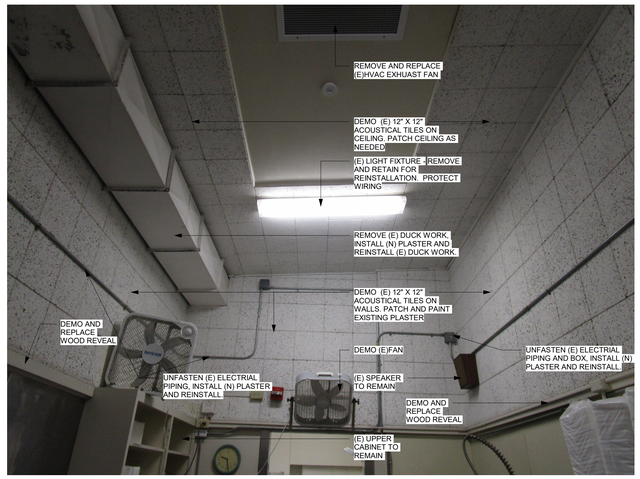


(E) WEST WALL



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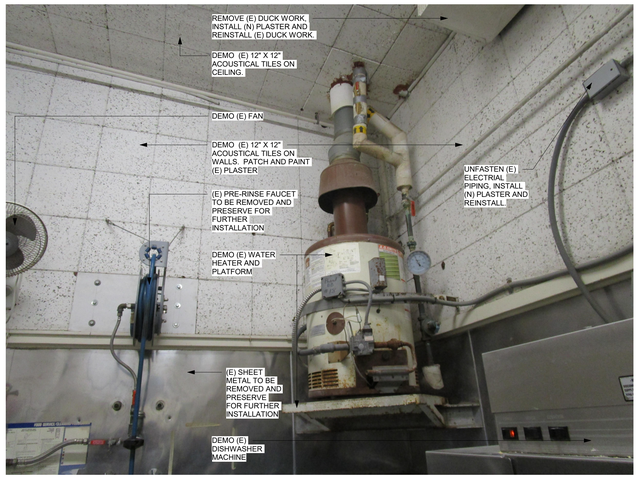
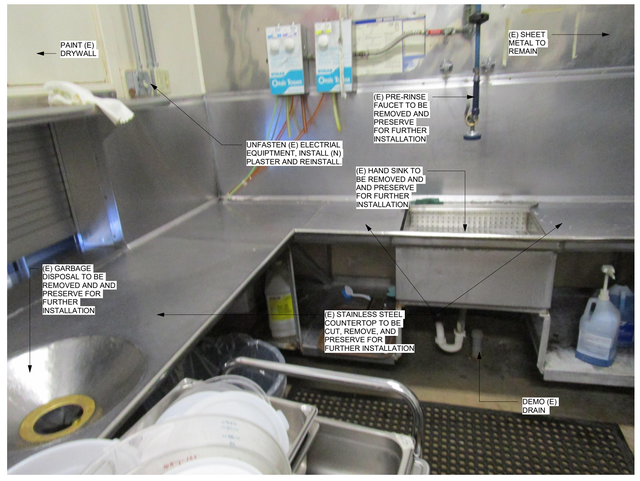
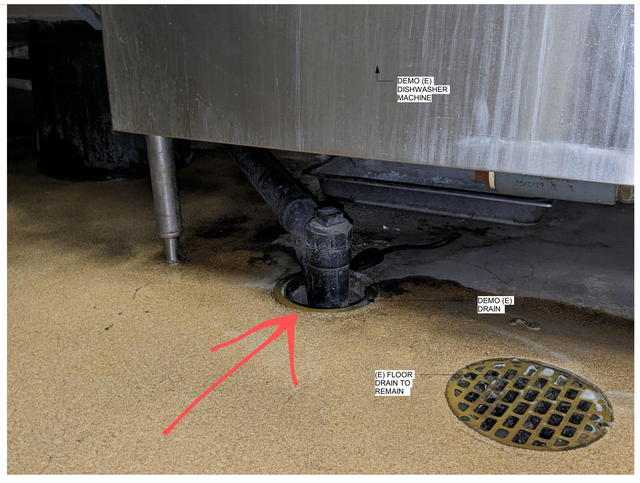


(E) WATER HEATER



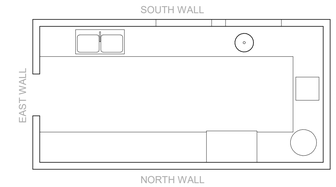
(E) SINK ON WEST WALL

(E) DISH WASHER APPLIANCE ON THE NORTH WALL



(E)DRAIN UNDER DISH WASHER APPLIANCE

KEY PLAN



Revision	Date

Consultant

Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 201, Encinitas, California 92024
Telephone: (760)753-8800 Fax: (760)452-7544

LICENSED ARCHITECT C-28036 REGISTERED PROFESSIONAL ENGINEER CIVIL CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

DEMO PHOTOS

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Checked: Checker
Date:
Job:

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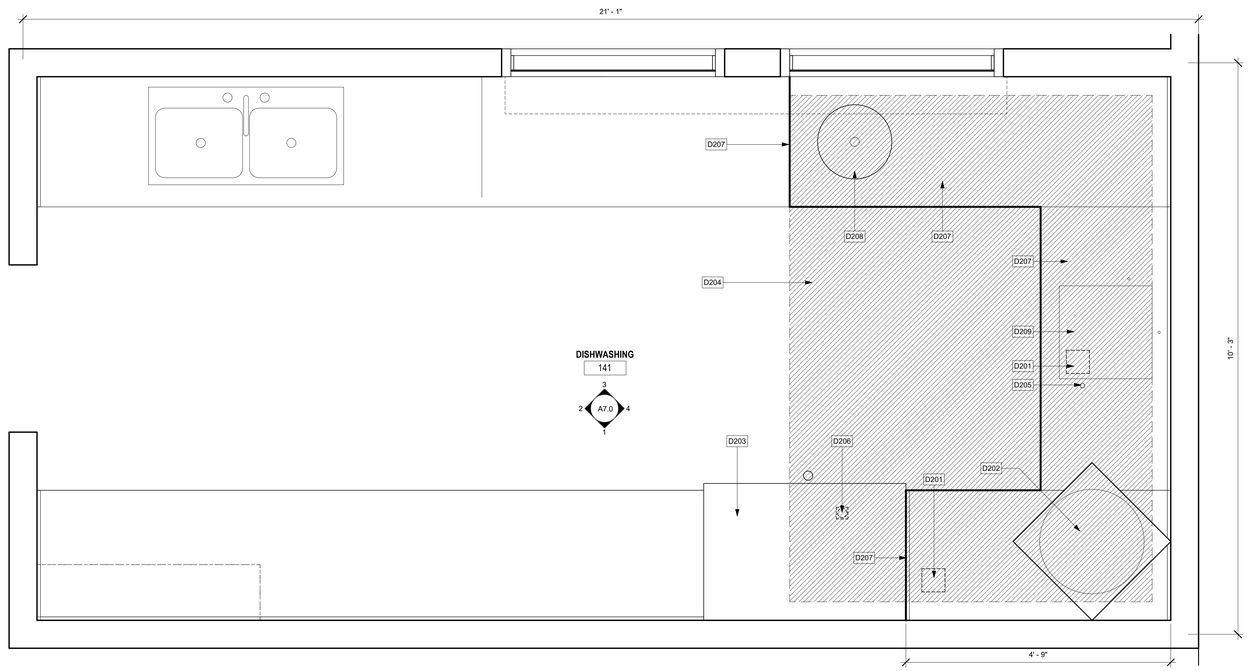
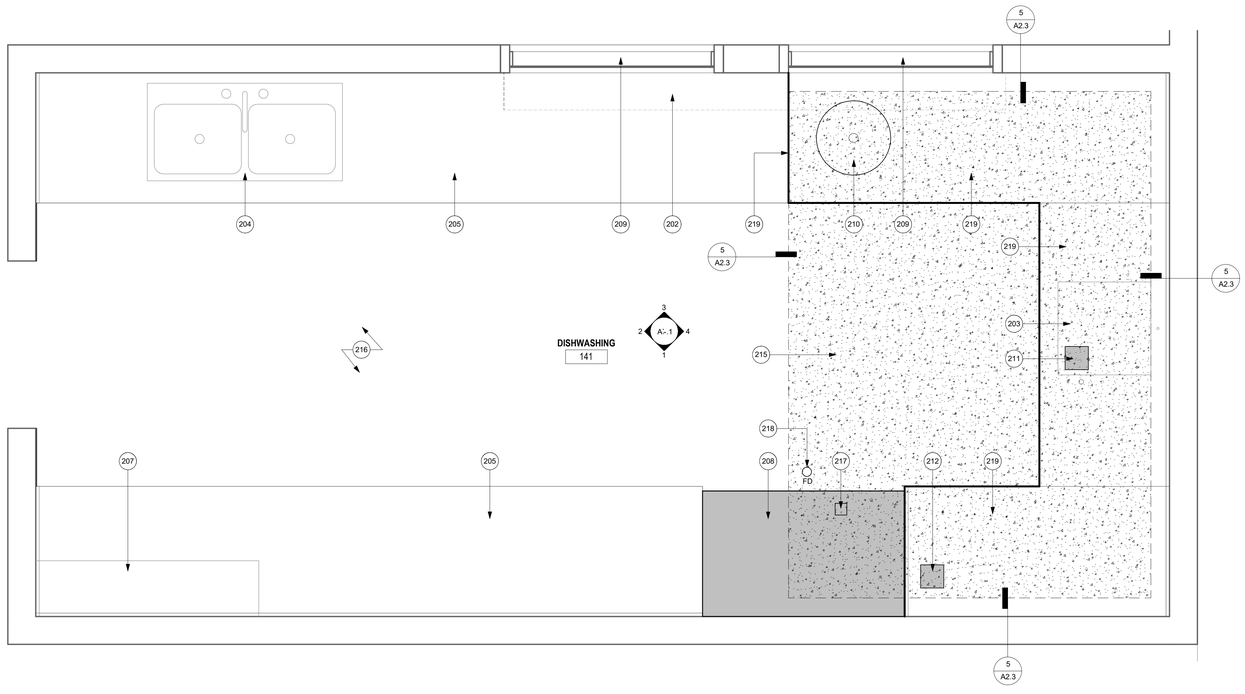


ENLARGED FLOOR PLAN-DEMO | 1" = 1'-0" | 2



ENLARGED FLOOR PLAN-NEW | 1" = 1'-0" | 1

KEY NOTES

DEMO

D201	DEMO (E) DRAIN. REFER TO PLUMBING DRAWINGS.
D202	DEMO (E) WATER HEATER, CAP, COVER UTILITIES, AND PLATFORM. REFER TO MECHANICAL DRAWINGS.
D203	DEMO (E) DISHWASHER APPLIANCE. REFER TO FOOD CONSULTANT DRAWINGS.
D204	SAWCUT AND DISPOSE (E) 4" CONCRETE SLAB
D205	DEMO (E) EXPOSED PIPE, REFER TO PLUMBING DRAWINGS.
D206	DEMO (E) EXPOSED DRAIN. REFER TO PLUMBING DRAWINGS.
D207	CUT (E) STAINLESS STEEL COUNTERTOP, SINKS AND BACKSPLASH WHERE NEED TO REMOVE FOR DEMOLITION OF (E) CONCRETE. PREPARE FOR INSTALLATION.
D208	REMOVE (E) GARBAGE DISPOSAL AND RETAIN FOR FURTHER INSTALLATION
D209	REMOVE (E) SINK AND RETAIN FOR FURTHER INSTALLATION

EXISTING/ NEW

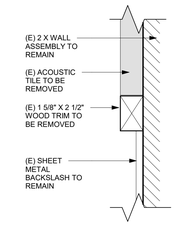
202	(E) STAINLESS WALL SHELF TO REMAIN
203	(E) HAND SINK W/ PRE-RINSE FAUCET TO BE REINSTALLED
204	(E) DOUBLE SINK TO REMAIN
205	(E) STAINLESS STEEL CLEAN DISH TABLE TO REMAIN
207	(E) UPPER CABINET STORAGE TO REMAIN
208	(N) COMMERCIAL DISHWASHER APPLIANCE
209	(E) COUNTERTOP ROLL UP WINDOW
210	(E) GARBAGE DISPOSAL TO BE REINSTALLED
211	(N) FLOOR SINK CONNECTION TO GREASE WASTE
212	(N) FLOOR SINK CONNECTION TO SANITARY WASTE
215	(N) 4" CONCRETE FLOOR
216	(E) CONCRETE FLOOR TO REMAIN
217	PLUG AND SLURRY, GROUT (E) FLOOR SINK PRIOR TO PLACING CONCRETE
218	(E) FLOOR DRAIN TO REMAIN
219	REINSTALL (E) COUNTERTOP, SINKS AND BACKSPLASH. SEE FOOD SERVICE SPECIFICATION 114000 FOR WELDING REQUIREMENTS. CAULK AT TOP. PROVIDE NEW SCREWS, AND ON HARDWARE AS NECESSARY, MATCH EXISTING.

LEGEND

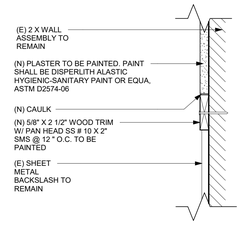
NEW

(E) CONCRETE BEING DEMOED

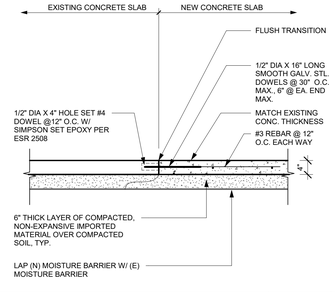
(N) 4" CONCRETE FLOOR



(E) WOOD REVEAL | 3" = 1'-0" | 3



(N) WOOD REVEAL | 3" = 1'-0" | 4



CONCRETE NEW TO EXIST. | 3/4" = 1'-0" | 5

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Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone: (760)753-8800 Fax: (760)452-7544

LICENSED ARCHITECT
C-28036
STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

DEMO PLAN / NEW PLAN

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Job:

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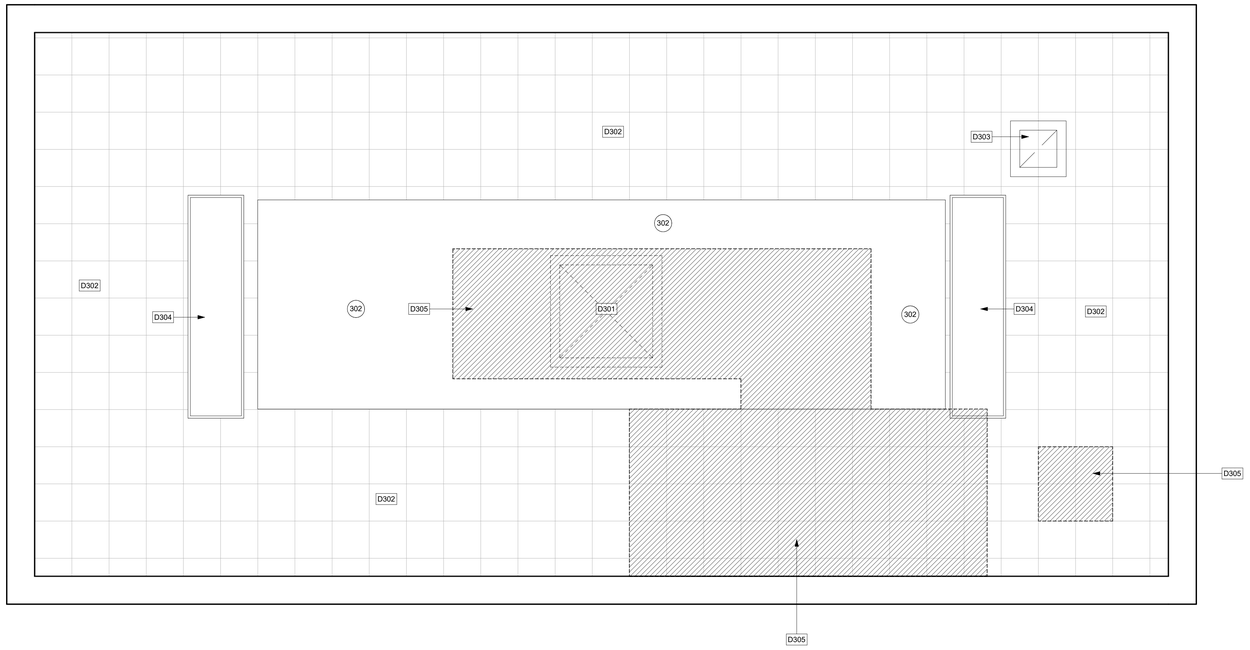
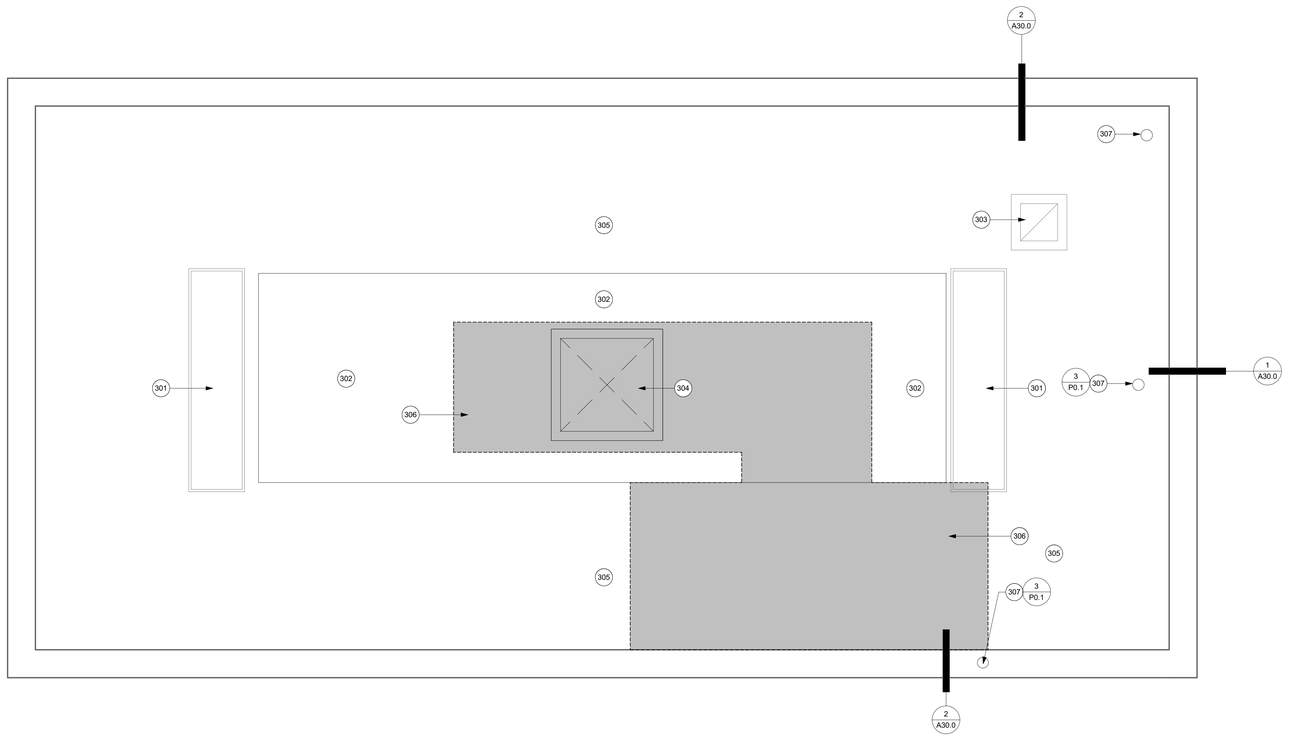


CEILING PLAN-DEMO | 1" = 1'-0" | 1



DISHWASHER CEILING PLAN-NEW | 1" = 1'-0" | 2

LEGEND

DEMO (E) PLASTER AND BUTTON BOARD FROM JOIST TO JOIST FOR (N) PLASTER CEILING INSTALLATION.

(N) PLASTER CEILING OVER LATH PER DETAIL.

KEYNOTE

DEMO

D301	DEMO (E) EXHAUST FAN. REFER TO MECHANICAL DRAWINGS.
D302	DEMO (E) 12" X 12" ACOUSTICAL TILES ON CEILING, DEMO (E) 2" X 3" STRIPPING AND PREPARE FOR (N) CEILING INSTALLATION. REMOVE ANY INSULATION AS NECESSARY.
D303	REMOVE AND RETAIN HVAC EQUIPMENT DURING ACOUSTIC CEILING REMOVAL AND REINSTALL AFTER NEW CEILING INSTALLATION.
D304	REMOVE AND RETAIN LIGHT FIXTURE DURING ACOUSTIC CEILING REMOVAL AND REINSTALL AFTER NEW CEILING INSTALLATION.
D305	DEMO PLASTER AND BUTTON BOARD FROM JOIST TO JOIST FOR (N) PLASTER. PATCH AND PAINT. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06

EXISTING / NEW

301	(E) 1 X 4 SURFACE MOUNTED LIGHT FIXTURE TO BE REINSTALLED
302	(E) PLASTER CEILING TO BE PAINTED. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06
303	(E) HVAC EQUIPMENT TO BE REINSTALLED
304	(N) EXHAUST FAN PER MECHANICAL
305	(N) 5/8" FIRE-SHIELD GYPSUM CEILING BOARD, ATTACH 2" X 10" JOIST WITH #10 SMS AT 24" O.C. TAPE AND TEXTURE AND PAINT. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06
306	ADD (N) 5/8" FIRE-SHIELD GYPSUM CEILING BOARD TAPE AND TEXTURE ANA PAINT. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06
307	VENT THROUGH ROOF. REFER TO PLUMBING PLANS

GENERAL NOTES

A. NEW FAN LOCATED ON ROOF AT EXISTING VENT/ROOF PENETRATION. POWER AND WALL SWITCH TO BE PROVIDED BY ELECTRICAL.

B. CONTRACTOR TO PROVIDE WATER TIGHT STAINLESS STEEL DUCT FROM DISH MACHINE VENT CONNECTION TO FAN.

C. CONTRATOR TO PROVIDE ROOF CURB AND SEAL ROOF FOR NEW EXHAUST FAN.

Revison	Date

Consultant

Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 201, Encinitas, California 92024
Telephone: (760)753-8800 Fax: (760)452-7544

LICENSED ARCHITECT
C-28036
STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

ENLARGED RCP PLANS

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Job:

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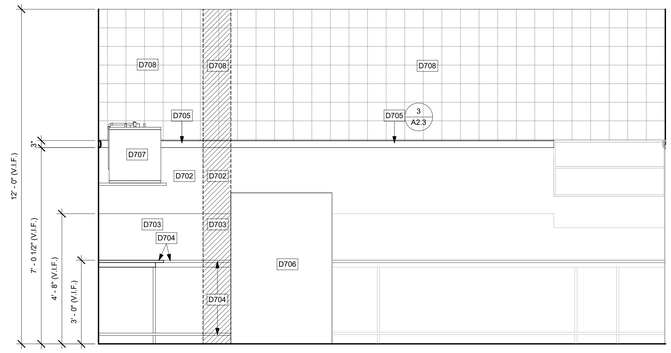
KEYNOTES

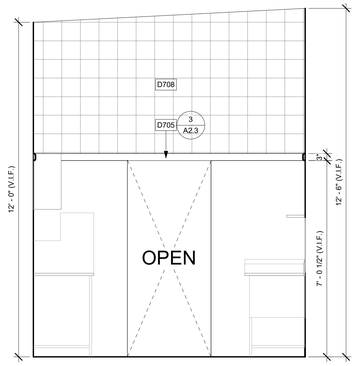
D702	REMOVE AND CUT IF NEEDED (E) STAINLESS STEEL SHEETING. PRESERVE FOR FURTHER INSTALLATION
D703	REMOVE AND CUT IF NEEDED (E) STAINLESS STEEL BACKSPLASH. PRESERVE FOR FURTHER INSTALLATION
D704	REMOVE AND CUT IF NEEDED (E) STAINLESS STEEL CLEAN DISH TABLE. PRESERVE FOR FURTHER INSTALLATION
D705	DEMO (E) WOOD REVEAL
D706	DEMO (E) COMMERCIAL DISHWASHER APPLIANCE
D707	DEMO (E) WATER HEATER ON PLATFORM
D708	DEMO (E) 12" X 12" ACOUSTICAL TILES
D709	REMOVE (E) TRASH DISPOSAL. PRESERVE FOR FURTHER INSTALLATION
D710	REMOVE (E) SINK. PRESERVE FOR FURTHER INSTALLATION

LEGEND

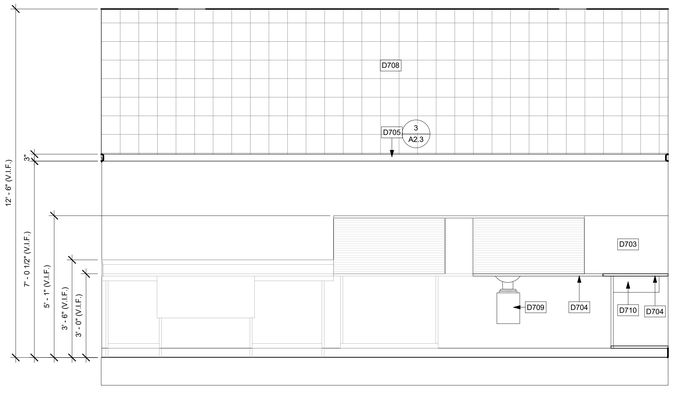
REMOVE (E) PLASTER AND BUTTON BOARD FROM STUD TO STUD FOR (N) VENT PIPE. SEE PLUMBING SHEET P2.2 FOR MORE INFO. PROVIDE (N) CEMENT BOARD AND PLASTER TO MATCH (E) AND PAINT.



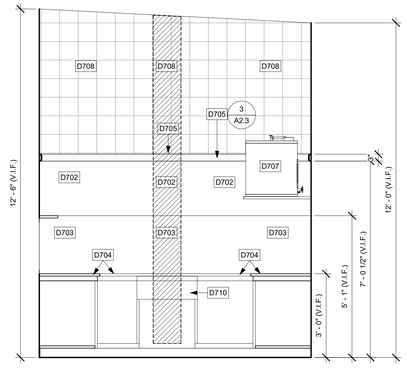
DEMO ELEVATION-NORTH | 1/2" = 1'-0" | 1



DEMO ELEVATION-EAST | 1/2" = 1'-0" | 2



DEMO ELEVATION-SOUTH | 1/2" = 1'-0" | 3



DEMO ELEVATION-WEST | 1/2" = 1'-0" | 4

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone: (760)753-8800 Fax: (760)452-7544

Revison	Date

Consultant

Engineer

LICENSED ARCHITECT C-28036 STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

DEMO INTERIOR ELEVATIONS

Drawn: Author
Checked: Checker
Date:
Job:

A7.0

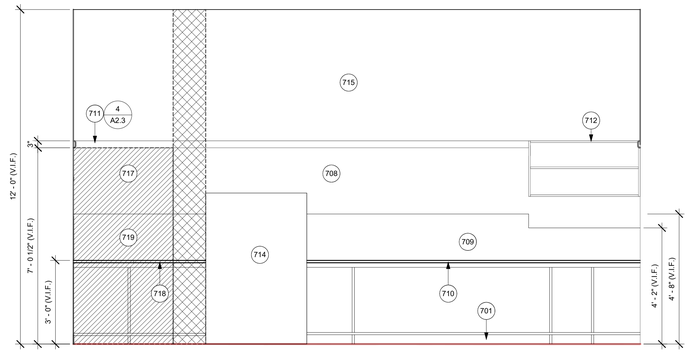
KEYNOTES

701	(E) WALLBASE TO REMAIN
702	(E) STAINLESS WALL SHELF TO REMAIN
704	(E) DOUBLE SINK TO REMAIN
707	(E) COUNTERTOP ROLL UP WINDOW TO REMAIN
708	(E) STAINLESS STEEL SHEETING TO REMAIN
709	(E) STAINLESS STEEL BACKSPLASH TO REMAIN
710	(E) STAINLESS STEEL CLEAN DISH TABLE TO REMAIN
711	(N) WOOD REVEAL
712	(E) UPPER CABINET STORAGE TO REMAIN
713	(E) PLASTER WALL TO BE REPAINTED. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06
714	(N) DISHWASHER APPLIANCE
715	ADD (N) PLASTER, PATCH AND PAINT. PAINT SHALL BE DISPERLITH ELASTIC HYGIENIC-SANITARY PAINT, OR EQUAL, ASTM D2574-06
716	REINSTALLED REMOVED (E) GARBAGE DISPOSAL PREVIOUSLY REMOVED
717	REINSTALLED (E) STAINLESS STEEL SHEETING PREVIOUSLY REMOVED
718	REINSTALLED (E) STAINLESS STEEL CLEAN DISH TABLE PREVIOUSLY REMOVED
719	REINSTALLED (E) STAINLESS STEEL BACKSPLASH PREVIOUSLY REMOVED
720	REINSTALLED (E) STAINLESS STEEL SINK PREVIOUSLY REMOVED

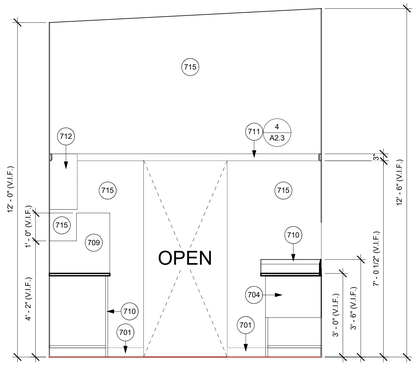
LEGEND

REINTALLATION AREA OF STAINLESS STEEL COUNTERTOP, SINKS AND BACKSPLASH AFTER (N) CONCRETE GOT ADDED.

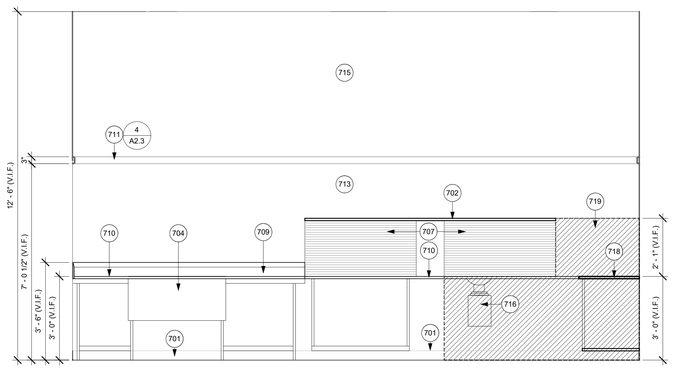
(N) CEMENT BOARD AND PLASTER TO MATCH (E) AND PAINT.



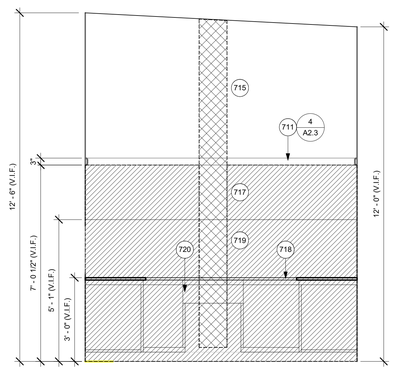
NORTH ELEVATION-NEW | 1/2" = 1'-0" | 1



EAST ELEVATION-NEW | 1/2" = 1'-0" | 2



SOUTH ELEVATION-NEW | 1/2" = 1'-0" | 3



WEST ELEVATION-NEW | 1/2" = 1'-0" | 4

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Consultant

Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd. Ste. 101, Encinitas, California 92024
Telephone: (760)753-8800 Fax: (760)452-7544

LICENSED ARCHITECT C-28036 REGISTERED CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

INTERIOR ELEVATIONS

Drawn: Author
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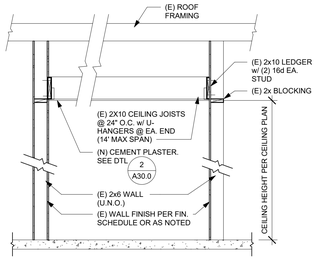
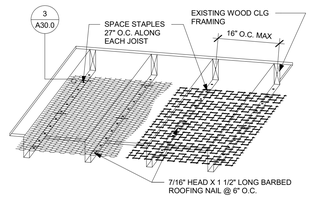


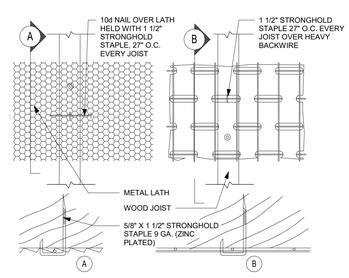
INT GYP OR PLS CLG WD STUD | 1/2" = 1'-0" | 1



HORIZONTAL LATH NAILING

ILUSTRATION SHOWING HOW A NAILED ON CEILING CAN BE GIVEN ADDITIONAL SUPPORT THROUGH USE OF STRONGHOLD EARTHQUAKE STAPLES IN BUILDINGS LOCATED IN AREAS SUBJECT TO EARTHQUAKE OR OTHER DISTURBANCES

CEILING- PLASTER CLG DETAIL | 3" = 1'-0" | 2



LONGITUDINAL SECTIONS OF JOISTS

CEILINGS- LATH ATTACHMENT DTL | 3" = 1'-0" | 3

1. CEILING SYSTEM GENERAL NOTES

1.01 Ceiling system components shall comply with ASTM C635 and Section 5.1 of ASTM E580.
1.02 The ceiling grid system must be rated heavy duty as defined by ASTM C635.
1.03 Ceiling systems - see specifications
1.04 Seismic Wall Clip - see specifications
1.05 Ceiling panels shall not support any luminaires, air terminals or devices.
1.06 For ceiling installations utilizing acoustical tile panels of mineral or glass fiber, it is not mandatory to provide 3/4" clearance between the acoustical tile panels and the wall on the sides of the ceiling which are free to slip. For all other ceiling panel types, provide 3/4" clearance between the ceiling panel and the wall on the sides of the ceiling free to slip. Clearance between ceiling grid runners/members and walls shall comply with the details on these drawings regardless of ceiling tile material.

2. MATERIALS

2.01 Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641. Wire shall be #12 gauge (0.106" diameter) with soft temper and minimum tensile strength = 70 ksi.
2.02 Galvanized sheet steel (including that used for metal stud and track compression struts/post) shall conform to ASTM A653, or other equivalent sheet steel listed in Section A3.1 of the North American Specification for the Design of Cold Formed Steel Structural Members (AISI S100). Material 43 mil (18 gauge) and lighter shall have a minimum yield strength of 33 ksi. Material 54 mil (16 gauge) and heavier shall have a minimum yield strength of 50 ksi.
2.03 Electrical metallic tube (EMT) shall be ANSI C80.3/UL 797 cabron steel with G90 galvanizing. EMT shall have minimum yield strength (Fy) of 30 ksi and minimum ultimate strength (Fu) of 48 ksi.

3. ATTACHMENT OF HANGER AND BRACING WIRES:

3.01 Separate all ceiling hanger and bracing wires at least 6 inches from all unbraced ducts, pipes, conduit, etc.
3.02 Hanger and bracing wires shall not attach to or bend around obstructions including but not limited to: piping, ductwork, conduit and equipment.
3.03 Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires.
3.04 Slack safety wires shall be considered hanger wires for installation and testing requirements.
3.05 Hanger and bracing wire anchorage to the structure shall be installed in such a manner that the direction of the anchorage aligns closely with the direction of the wire. (e.g. bracing wire ceiling clips must be bent as shown in the details and rotated as required to align closely with the direction of the wire, screw eyes in wood must be installed so they align closely with the direction of the wire, etc.)
3.06 Provide trapeze or other supplemental support members at obstructions to typical hanger spacing. Provide additional hangers, struts or braces as required at all ceiling breaks, soffits, or discountinuous areas. Hanger wires that are more than 1 in 6 out of plumb shall have counter - sloping wires.

4. FASTENERS AND WELDING

4.01 Sheet metal screws shall comply with ASTM C1513 and ASME B18.6.3. Penetration of screws through joined materail shall not be less than three exposed threads.
4.02 Expansion anchor shall be per specification - **Not used in this project.**
4.03 Power-Actuated fasteners shall be per specification - **Not used in this project.**
4.04 If not otherwise specified in the evaluation report, power-actuated fasteners installed in steel shall be installed so the entire pointed end of the fastener is driven through the steel member.
4.05 Power-Actuated fasteners in concrete are not permitted for bracing wire.
4.06 Concrete reinforcement and prestressing tendons shall be located by non-destructive means prior to installing post - installed anchor.
4.07 Welding shall be in accordance with AWS D1.3 using E60XX series electrodes

5. TESTING:

5.01 All field testing must be done in the presence of the project inspector
5.02 Post-installed anchors in concrete used to support hanger wires shall be tested at a frequency of 10 percent. Power -actuated fasteners in concrete shall be field tested for 200 pounds in tension. All other post-installed anchors in concrete shall be tested in accordance with CBC Section 1910A.5.
5.03 Post-installed anchors in concrete used to attach bracing wires shall be tested at a frequency of 50 percent in accordance with CBC Section 1910A.5.

6. LUMINAIRES

6.01 All luminaires shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the luminaire. A minimum of two screws or approved fasteners are required at each luminaire, per ASTM E580, Section 5.3.1
6.02 Surface-mounted luminaires shall be attached to the main runner with at least two positive clamping devices. The clamping device shall completely surround the supporting ceiling runner and be made of steel with a minimum thickness of # 14 gauge. Rotational spring catches do not comply. A #12 gauge slack safety wire shall be connected from each clamping device to the structure above. Provide additional supports when a luminaire is 8 feet or longer or exceeds 56 pounds. Maximum spacing between supports shall not exceed 8 feet.
6.03 Luminaires weighing less than or equal to 10 pounds may be supported directly on the ceiling runners, shall have a minimum of one #12 gauge slack safety wire connected from the fixture housing to the structure above.
6.04 Luminaires weighing greater than 10 lb. but less than or equal to 56 pounds may be supported directly on the ceiling runners, but they shall have a minimum of two #12 gauge slack safety wires connected from the fixture housing at diagonal corners to the structure above.
Exception: All luminaires greater than two by four feet weighing less than 56 pounds shall have a #12 gauge slack safety wire at each corner.
6.05 All luminaires weighing greater than 56 pounds shall be independently supported by not less than four taut #12 gauge hanger wires (one at each corner) attached from the fixture housing to the structure above or other approved hangers. The four taut #12 gauge wires or other approved hangers, including their attachment to the structure above, shall be capable of supporting four times the weight of the fixture.

7. SERVICES WITHIN THE CEILING

7.01 All flexible sprinkler hose fitting mounting brackets, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means. Screws or approved fasteners are required. A minimum of two attachments are required at each component.
7.02 Ceiling-mounted air terminal or other services weighing less than or equal to 20 pounds shall have one #12 gauge slack safety wire attached from the terminal or service to the structure above.
7.03 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 20 pounds but less than or equal to 56 pounds shall have two #12 gauge slack safety wires (at diagonal corners) connected from the terminal or service to the structure above.
7.04 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 56 pounds shall be supported directly from the structure above by not less than four taut #12 gauge hanger wires attached from the terminal or service to the structure above or other approved hangers.

8. OTHER DEVICES WITHIN THE CEILING

8.01 All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid. In addition, devices weighing more than 10 pounds shall have a #12 gauge slack safety wire anchored to the structure above. Devices weighing more than 20 pounds shall be supported independently from the structure above.

GENERAL NOTES | 12" = 1'-0" | 5

Revison	Date

Consultant

Engineer

vlstudiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone: (760)753-6800 Fax: (760)452-7544

LICENSED ARCHITECT
C-28036
REGISTERED
STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

RCP DETAILS

Drawn: Author
Checked: Checker
Date:
Job:

A30.0

MECHANICAL GENERAL NOTES

1. REVIEW THESE PLANS AND SPECIFICATIONS INCLUDING PLANS AND SPECIFICATIONS OF OTHER TRADES PRIOR TO BID. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT OF RECORD IN SUFFICIENT TIME TO BE INCORPORATED INTO THE BID.
2. VERIFY & COORDINATE EXACT LOCATION OF EXISTING EQUIPMENT. PENETRATIONS THROUGH ROOF, FLOOR AND WALLS WITH ARCHITECTURAL, STRUCTURAL, PLUMBING AND ELECTRICAL PRIOR TO SHOP DRAWINGS AND CONSTRUCTION.
3. COORDINATE EXACT SIZE AND ROUTING OF DUCT WORK AND PIPING WITH ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL PRIOR TO SHOP DRAWING AND CONSTRUCTION.
4. PROVIDE ACCESS AND CLEARANCES FOR EQUIPMENT MAINTENANCE AS RECOMMENDED BY APPLICABLE CODES AND EQUIPMENT MANUFACTURER. COORDINATE WITH OTHER TRADES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES, EQUIPMENT, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF DEMOLITION AND/OR NEW WORK.
6. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK.
7. ALL WORK SHALL COMPLY WITH THE LATEST EDITION, OF ALL APPLICABLE CODES, SPECIFICATIONS, REQUIREMENTS OF AGENCIES HAVING JURISDICTION AND INDUSTRY STANDARDS.
8. INSULATE DUCT WORK IN ACCORDANCE WITH THE GOVERNING CODES.
9. START-UP AND COMMISSION THE MECHANICAL SYSTEMS IN ACCORDANCE WITH CALIFORNIA ENERGY CODE, ASHRAE AND NEBB STANDARDS.
10. THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE ALL DETAILS AND NECESSARY OFFSETS OF PIPING OR DUCT WORK. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER TO AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL COMPLY WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE OR INCUR ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE ITEMS CONCERNED.
11. SUBSTITUTION IS NOT ALLOWED WITHOUT APPROVAL OF OWNER AND ARCHITECT OF RECORD.
12. SUBMITTALS: APPROVAL OF THE SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.
13. ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED WHILE NORMAL OPERATIONS ARE BEING CONDUCTED IN ADJACENT SPACES. COORDINATE WITH GENERAL CONTRACTOR AND DISTRICT PROJECT MANAGER TO INSURE THAT WORK DOESN'T DISRUPT OPERATIONS IN ANY WAY.
14. INSTALL ALL WORK TO CLEAR NEW AND EXISTING ARCHITECTURAL AND STRUCTURAL MEMBERS AND EXISTING MECHANICAL SYSTEMS. ADJUST PIPING AND DUCTWORK AS REQUIRED TO ACCOMMODATE NEW WORK. NO ITEMS SUCH AS PIPE, DUCT, ETC., TO BE IN CONTACT WITH ANY EQUIPMENT. INSTALL ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE OR AS SPECIFIED ON DRAWINGS TO MAINTAIN MAXIMUM ACCESSIBILITY.
15. RESTORE ALL DAMAGE RESULTING FROM YOUR WORK, AND LEAVE PREMISES IN CLEAN CONDITION WHEN FINISHED WITH WORK.
16. KEEP ONE SET OF PLANS AT THE JOB SITE TO RECORD/MARK-UP ANY AND ALL CHANGES DURING CONSTRUCTION AND PROVIDE A COMPLETE SET OF MARKED-UP AS-BUILT DRAWINGS TO THE ARCHITECT OF RECORD AT COMPLITION OF CONSTRUCTION. ATTACHING RFI(S), RESPONSE TO RFI(S), AND CCD(S) TO DRAWINGS IS NOT ACCEPTABLE UNLESS IT IS A MARKED-UP COPY OF CONSTRUCTION DOCUMENTS.
17. PROVIDE BALANCING AND TESTING REPORT FOR AIR SYSTEMS TO ACHIEVE AND CONFIRM COMPLIANCE WITH DRAWINGS AND SPECIFICATION. TESTING AND BALANCING SHALL BE PERFORMED BY AN AGENT CERTIFIED BY EITHER AABC OR NEBB. USE STANDARD FORMS FOR AABC'S "NATIONAL STANDARD FOR TESTING, ADJUSTING, AND BALANCING. FOR ENVIRONMENTAL SYSTEMS USE NEBB'S PROCEDURAL STANDARDS.
18. OBTAIN WRITTEN PERMISSION OF ARCHITECT OF RECORD BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS. IT SHALL BE REVIEWED BY AND APPROVED BY STRUCTURAL ENGINEER OF RECORD AND DSA.
19. NO MECHANICAL SYSTEM SHALL BE INSTALLED UNTIL ALL REQUIRED MECHANICAL PLAN CHECK PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REQUIRED AGENCIES AND OR ARCHITECT OF RECORD.
20. COORDINATE AND SCHEDULE TIMING FOR UTILITY SERVICE CONNECTION AND DISCONNECT WITH THE OWNER.
21. ANY STRUCTURAL FIREPROOFING DAMAGED DURING INSTALLATION OF MECHANICAL EQUIPMENT, PIPING, ETC. SHALL BE REPAIRED AT NO COST TO THE OWNER. REPAIR SHALL BE DIRECTED BY THE ENGINEER OF RECORD.
22. CONTROLS CONTRACTOR, ELECTRICAL CONTRACTOR, AND MECHANICAL CONTRACTOR SHALL WORK AND COORDINATE TOGETHER TO MAINTAIN REQUIRED CLEARANCES FOR ALL EQUIPMENT AND CONTROL PANELS. IF THERE ARE ANY ISSUES TO PROVIDE REQUIRED CLEARANCE IT SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD PRIOR TO INSTALLATION. PRIOR TO INSTALLATION OF EQUIPMENT, PIPING, CONDUITS AND DISCONNECT SWITCHES PROVIDE DETAILED SHOP DRAWINGS FOR ALL ROOF MOUNTED EQUIPMENT DEMONSTRATING THAT PIPING AND CONDUITS WILL NOT INTRUDE INTO MANUFACTURER RECOMMENDED CLEARANCES AND ALL PARTS OF CEC SECTION 110.26.
23. ALL DUCT SIZES NOTED ON DRAWINGS ARE INSIDE DIMENSIONS.
24. AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HVAC EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DITRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEETMETAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER DEBRIS WHICH MAY ENTER THE SYSTEM.

HVAC ABBREVIATIONS & SYMBOLS

SYMBOLS	ABBREV.	DESCRIPTION
	(L)	LINE DUCTWORK (PLENUM)
UP		DUCT RISE IN DIRECTION OF FLOW
DN		DUCT DROP IN DIRECTION OF FLOW
		DUCT TRANSITION
		DUCT TRANSITION FROM SQUARE TO ROUND
		ROUND DUCT UP
		ROUND DUCT DOWN
	SA/OSA	SUPPLY AIR/OUTSIDE AIR DUCT UP & DOWN
	RA	RETURN AIR DUCT UP & DOWN
	EA	EXHAUST AIR DUCT UP
	EA	EXHAUST AIR DUCT DOWN
	CD	CEILING DIFFUSER
	CR	CEILING RETURN
	CE	CEILING EXHAUST
18x10		DUCT WORK (1ST NUMBER INDICATES WIDTH SHOWN), NET INSIDE DIMENSION
	TV	SQUARE ELBOW WITH TURNING VANES
		RADIUS ELBOW
	FLEX	FLEXIBLE CONNECTION
	FLEX	FLEXIBLE DUCT CONNECTION
	MVD	MANUAL VOLUME DAMPER
	BDD	BACK DRAFT DAMPER
		DEMOLISH & REMOVE EXISTING DUCTWORK/EQUIPMENT/PIPE
- --		SYMBOL, SEE EQUIPMENT SCHEDULE

HVAC ABBREVIATIONS

ABBREV.	DESCRIPTION
AC	AIR CONDITIONING
AD/AP	ACCESS DOOR/ACCESS PANEL
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSE POWER
CD	CEILING DIFFUSER/CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
COTG	CLEAN OUT TO GRADE
CR	CEILING RETURN
DIA.	DIAMETER
DL	DOOR LOUVER
DN	DOWN
DWGS.	DRAWINGS
(E)	EXISTING
EA	EXHAUST AIR
EF	EXHAUST FAN
EFF.	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
FC	FLEXIBLE CONNECTION
FPM	FEET PER MINUTE
GA	GAUIGE
HP	HORSE POWER
IN	INCH
KWH	KILOWATT HOUR
KW	KILOWATTS
LBS	POUNDS
MVD	MANUAL VOLUME DAMPER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
OSA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RG	RETURN GRILLE
SA	SUPPLY AIR
SD	SUPPLY DIFFUSER
SP	STATIC PRESSURE
SPD	STATIC PRESSURE DROP
SQFT	SQUARE FEET
TP	TOTAL PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
VTR	VENT THRU ROOF
VFD	VARIABLE FREQUENCY DRIVE

SHEET INDEX

EXHAUST FAN SCHEDULE

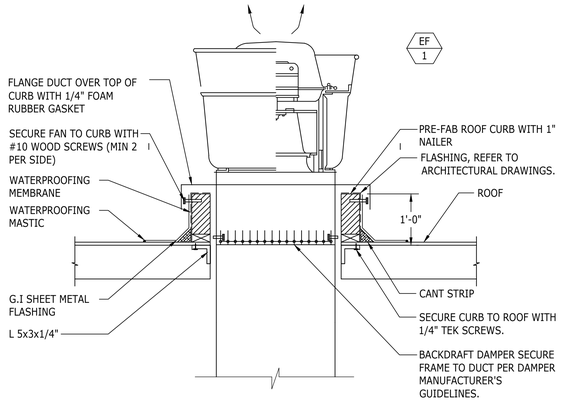
SYMBOL	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	FAN TYPE	DRIVE	CFM	SP IN. WG.	FAN (RPM)	SOUND RATING (SONES)	ELECTRICAL HP(W)	ELECTRICAL V/PH/Hz	WEIGHT (LBS)	DETAIL	REMARKS
EF 1	GREENHECK CUE-160HP-VG	BUILDING 1 ROOF	DISHWASHING 141	UPBLAST CENTRIFUGAL	DIRECT	1400	0.5	1028	10.4	1/2	115/60/1	110	1/M-0.1	(1)(2)(3)(4)(5)(6)(7)

(1) PROVIDE BACK DRAFT DAMPER.
(2) INTERLOCK WITH LIGHT SWITCH. REFER TO 2/M0.1 AND ELECTRICAL PLANS.
(3) PROVIDE WITH DISCONNECT SWITCH BY ELECTRICAL
(4) PROVIDE STAINLESS STEEL BIRD SCREEN.
(5) PROVIDE WITH PRE-MANUFACTURED ROOF CURB.
(6) PROVIDE WITH POTENTIOMETER DIAL.
(7) PROVIDE EQUIPMENT IDENTIFICATION TAG IN COMPLIANCE WITH SPECIFICATIONS.

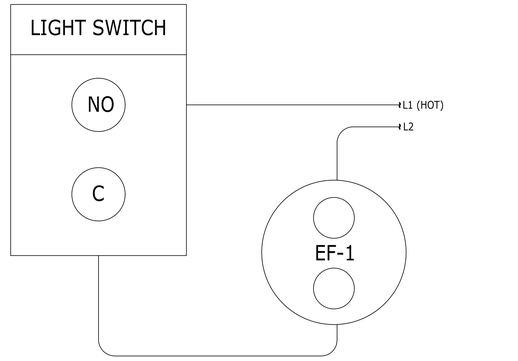
GRILLE, REGISTER AND DIFFUSER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	NECK SIZE	FRAME STYLE	FRAME SIZE	OBD (YES / NO)	THROW	DESCRIPTION	REMARKS
EG-1	TITUS 50F-NT	SEE PLANS	SURFACE	SEE PLANS	NO	EXHAUST	EGG CRATE SQUARE CEILING EXHAUST GRILLE	(1)(2)

(1) COORDINATE WITH ARCHITECT FOR FINISH COLOR. (2) ALTERNATIVE MANUFACTURER:"KRUEGER", "METAL AIR", "PRICE".

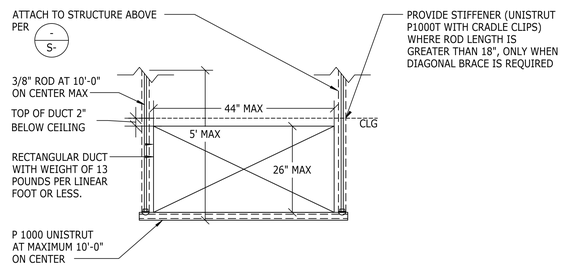


1 M-0.1 ROOF MOUNTED EXHAUST FAN DETAIL
SCALE: NTS



NOTES:
1. INCLUDED IN SCOPE OF WORK IS TO WORK WITH AND ASSIST MECHANICAL AND TAB CONTRACTORS, AS WELL AS COMMISSIONING AGENTS DURING SYSTEMS TESTING, BALANCING, AND COMMISSIONING.
2. LIGHT SWITCH AND WIRING SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. DETAIL IS DIAGRAMMATIC.

2 M-0.1 EXHAUST FAN LIGHT SWITCH CONTROLS DETAIL
SCALE: NTS



3 M-0.1 EXPOSED SQUARE/RECTANGULAR DUCT SUPPORT
SCALE: NTS

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PMPE CONSULTANTS MECHANICAL ENGINEER
2727 KURTZ ST., SUITE 216 SAN DIEGO, CA 92110
PHONE: (858) 642-9000 FAX: (858) 642-9002
Consultant

REGISTERED PROFESSIONAL ENGINEER RAY PAJOUHESH MECHANICAL STATE OF CALIFORNIA
M27488 EXP.:06/30/23
Engineer

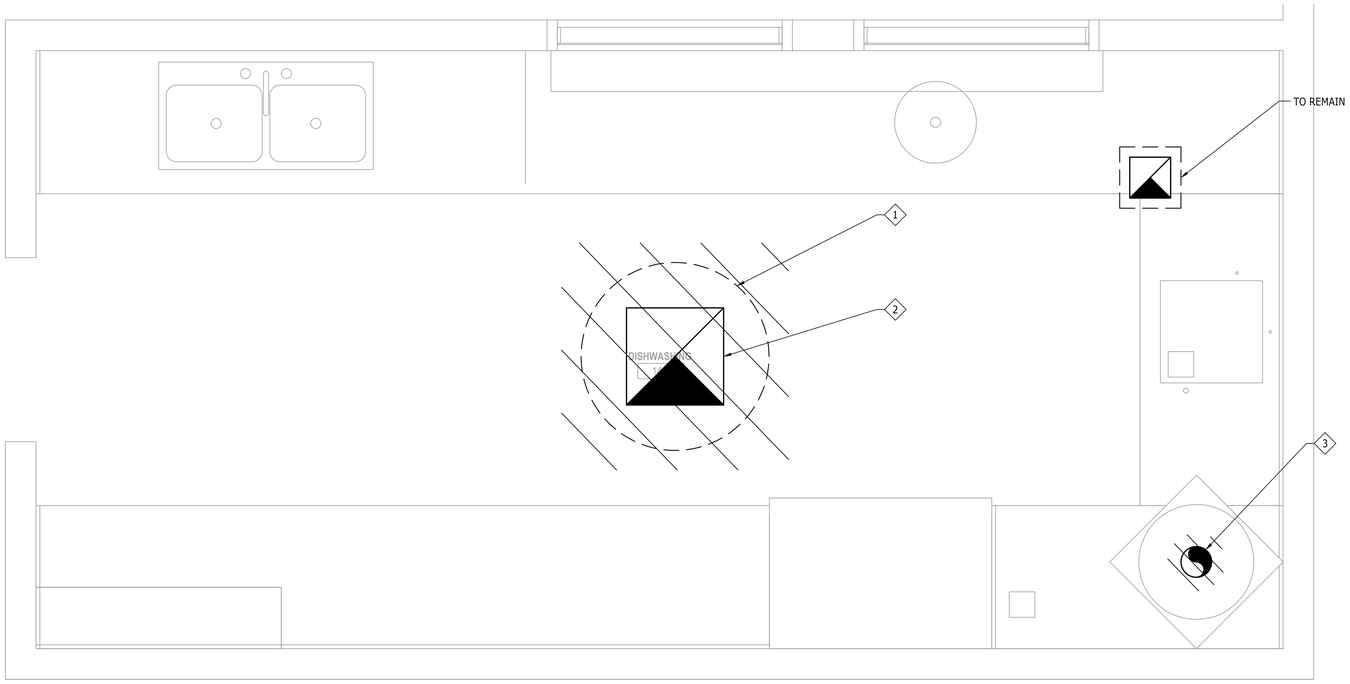
studiowc ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201, Encinitas, California 92024
Telephone: (760) 452-8880 Fax: (760) 452-7341

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

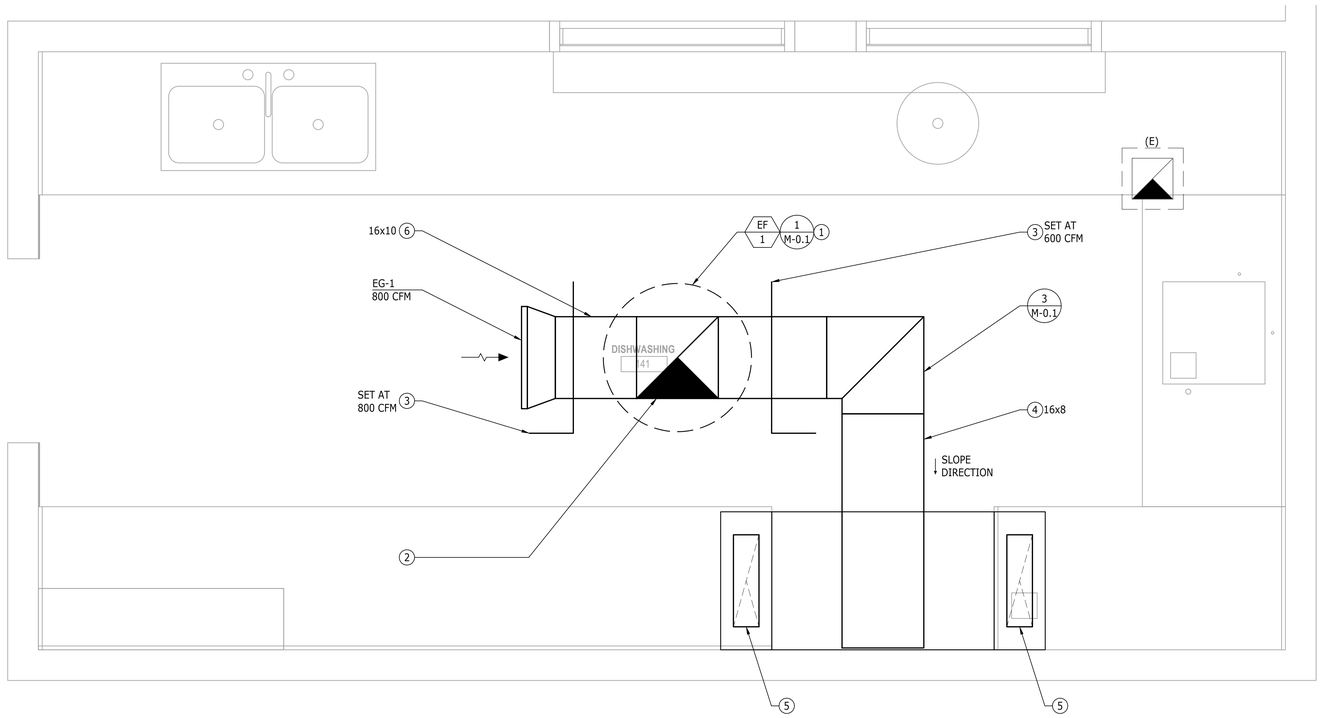
MECHANICAL LEGEND, GENERAL NOTES, EQUIPMENT SCHEDULES, DETAILS, AND CONTROLS

Drawn: Author
Checked: Checker
Date: Issue Date
Job: LMSV-LMAA-01

M0.1



DISHWASHER-ENLARGED DEMOLITION PLAN | 1" = 1'-0" | 1



DISHWASHER-ENLARGED RENOVATION PLAN | 1" = 1'-0" | 2

GENERAL NOTES

1. ALL EQUIPMENT, PIPING, AND ACCESSORIES SHOWN ON 1/M2.1 ARE EXISTING. PRIOR TO BID FIELD VERIFY LOCATION, QUANTITY, AND SIZES. IF THERE ARE ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL EXISTING CONDITIONS IT SHALL BE BROUGHT TO THE ARCHITECT OF RECORD IN SUFFICIENT TIME TO BE INCORPORATED INTO BID DOCUMENTS.
2. PRIOR TO DEMOLITION, COORDINATE ELECTRICAL POWER DISCONNECT WITH ELECTRICAL CONTRACTOR, AND CONTROLS WITH CONTROL CONTRACTOR.
3. AVOID CUTTING ANY STRUCTURAL MEMBERS UNLESS SHOWN ON STRUCTURAL DRAWINGS.
4. RESTORE ALL DAMAGE TO ROOF, WALLS, FLOOR, CEILING, AND OTHER COMPONENTS OF THE BUILDING AS A RESULT OF DEMOLITION AND/OR INSTALLATION OF NEW SYSTEMS.
5. TAG EXHAUST FAN TO CORRESPOND WITH EQUIPMENT SCHEDULE OR AS DIRECTED BY THE OWNER. COORDINATE WITH OWNER FOR NUMBERING SYSTEM.
6. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD PRIOR TO CONSTRUCTION.
7. FOR EXACT LOCATION OF DUCTWORK AND GRILLES REFER TO ARCHITECTURAL REFLECTED CEILING PLAN. IF THERE ARE ANY DISCREPANCIES BETWEEN ARCHITECTURAL RCP AND THIS DRAWING.
8. PROVIDE DUCT HANGERS AND SUPPORTS IN COMPLIANCE WITH DETAILS ON M-0.1. PROVIDE SEISMIC BRACING AT ALL ELBOWS, END OF DUCT RUNS, AND BOTTOM OF RISERS.
9. ALL DUCTWORK SHOWN SHALL BE STAINLESS STEEL, REFER TO FOOD SERVICE CONSULTANT'S CONSTRUCTION DOCUMENTS FOR TYPE.

DEMOLITION KEYNOTES

1. REMOVE AND DEMOLISH ROOF MOUNTED EXHAUST FAN INCLUDING ROOF CURB, AND SUPPORTS. RE-USE EXISTING ROOF PENETRATION.
2. REMOVE AND DEMOLISH DUCT THRU ROOF AND CEILING MOUNTED GRILLE.
3. REMOVE AND DEMOLISH WATER HEATER FLUE VENT THROUGH ROOF. PATCH ROOF WEATHER TIGHT, SIMILAR TO EXISTING.

RENOVATION KEYNOTES

1. PROVIDE ROOF MOUNTED EXHAUST FAN INCLUDING PRE-MANUFACTURED ROOF CURB AND BACKDRAFT DAMPER.
2. 16"x16" SEAMLESS STAINLESS STEEL EXHAUST AIR DUCT RISE UP AND TRANSITION TO CONNECT TO EF-1. UTILIZE EXISTING ROOF OPENING. PATCH AND ENLARGE EXISTING ROOF OPENING AS REQUIRED.
3. STAINLESS STEEL MANUAL VOLUME DAMPER.
4. DUCTWORK SHALL BE SEAMLESS STAINLESS STEEL. SLOPE DUCT TOWARD THE DISHWASHER.
5. DISHWASHER PLENUM DUCT CONNECTION. FOR DUCT WORK EXTENDING AND CONNECTING TO 16x8 DUCT REFER TO FOOD SERVICE DRAWINGS.
6. THIS DUCT SHALL BE INSTALLED LEVEL.

EXISTING EXHAUST FAN

Revision	Date

PMPE CONSULTANTS
MECHANICAL ENGINEER
7510 MISSION VALLEY ROAD, SUITE 116 (858) 694-0800
SAN DIEGO, CA 92121 FAX: (858) 641-0802
Consultant

REGISTERED PROFESSIONAL ENGINEER
RAY PAJOUHESH
M27488
EXP:06/30/23
MECHANICAL
STATE OF CALIFORNIA
Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201, Encinitas, California 92024
Telephone: (760) 753-6800 Fax: (760) 452-7341

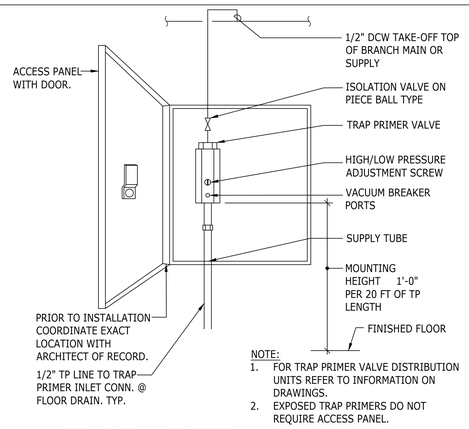
REGISTERED ARCHITECT
RAY D. WILLIS
STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

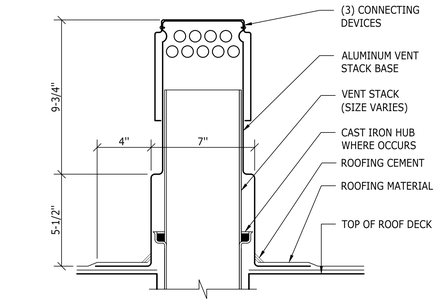
ENLARGED FLOOR PLANS

Drawn: Author
Checked: Checker
Date: Issue Date
Job: LMSV-LMAA-01

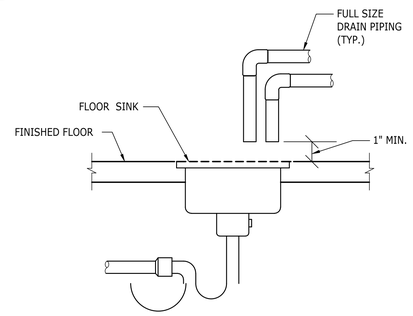
M2.1



1 P0.1 TRAP PRIMER DETAIL
SCALE: NONE



2 P0.1 HIGH SECURITY VENT THROUGH ROOF
SCALE: NONE



3 P0.1 FLOOR SINK INDIRECT WASTE DETAIL
SCALE: NTS

PLUMBING GENERAL NOTES

1. REVIEW THESE PLANS AND SPECIFICATIONS INCLUDING PLANS AND SPECIFICATIONS OF OTHER TRADES PRIOR TO BID. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD IN SUFFICIENT TIME TO BE INCORPORATED INTO THE BID.
2. VERIFY & COORDINATE EXACT LOCATION OF EQUIPMENT, PENETRATIONS THROUGH ROOF, FLOOR AND WALLS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PRIOR TO SHOP DRAWINGS AND CONSTRUCTION.
3. COORDINATE EXACT SIZE AND ROUTING OF PIPING WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PRIOR TO SHOP DRAWING AND CONSTRUCTION.
4. PROVIDE A COMPLETE SET OF SHOP DRAWINGS AND DETAILS BASED ON ACTUAL FIELD MEASUREMENT AND EQUIPMENT PROCURED.
5. PROVIDE ACCESS AND CLEARANCES FOR EQUIPMENT MAINTENANCE AS RECOMMENDED BY APPLICABLE CODES AND EQUIPMENT MANUFACTURER. COORDINATE WITH OTHER TRADES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES, EQUIPMENT, AREAS & PROPERTY THAT MAY BE DAMAGED AS A RESULT OF DEMOLITION AND/OR NEW WORK.
7. FOR CONDITIONS THAT PIPE AND CONDUIT SUPPORT IS NOT PROVIDED, REFER TO SMACNA DETAILS.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS AND REQUIREMENTS OF AGENCIES HAVING JURISDICTION AND INDUSTRY STANDARDS.
9. VERIFY EXACT LOCATION OF PLUMBING FIXTURES AND FLOOR DRAINS WITH THE ARCHITECT.
10. TERMINATE VENTS THRU ROOF A MINIMUM OF 18 INCHES ABOVE ROOF AND MINIMUM 10 FEET HORIZONTAL AWAY FROM HVAC SYSTEMS OUTSIDE AIR INTAKES.
11. COORDINATE EXACT LOCATION AND SIZES FOR PIPE SLEEVES THRU CONCRETE WALL OR FLOOR WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
12. PRIOR TO INSTALLATION VERIFY EXACT LOCATION, INVERT ELEVATION, PIPE SIZES AND POINT OF CONNECTION. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
13. LOCATE ALL VALVES WHERE THEY ARE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS OR ABOVE A CEILING, PROVIDE ACCESS PANEL.
14. THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE ALL DETAILS AND NECESSARY OFFSETS OF PIPING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER TO AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENING AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL COMPLY WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE OR INCUR ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE ITEMS CONCERNED.
15. SUBSTITUTION IS NOT ALLOWED WITHOUT APPROVAL OF OWNER AND ARCHITECT OF THE RECORD.
16. IF THE CONTRACTOR'S USE OF SUBSTITUTE MATERIAL, EQUIPMENT OR METHODS OF INSTALLATION REQUIRES ANY CHANGES IN OTHER TRADES WORK FROM THAT SHOWN ON THE DRAWINGS, THE EXTRA COST IS THE RESPONSIBILITY OF THE CONTRACTOR INITIALING THE SUBSTITUTION.
17. SUBMITTALS: APPROVAL OF THE SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.
18. CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT.
19. NO PLUMBING SHALL BE INSTALLED UNTIL ALL REQUIRED PLUMBING PLAN CHECK PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REQUIRED AGENCIES.
20. COORDINATE AND SCHEDULE TIMING WITH SCHOOL DISTRICT FOR UTILITY SERVICE DISCONNECTION AND CONNECTION.
21. ALL LINES BELOW SLAB ON GRADE TO BE LOCATED AWAY FROM ALL LOAD BEARING FOOTINGS.
22. ANY STRUCTURAL FIREPROOFING DAMAGED DURING INSTALLATION OF PLUMBING EQUIPMENT, PIPING, ETC. SHALL BE REPAIRED AT NO COST TO THE OWNER. REPAIR SHALL BE DIRECTED BY THE ARCHITECT.
23. PRIOR TO INSTALLATION OF TRAP PRIMERS, COORDINATE EXACT LOCATION OF REQUIRED ACCESS DOORS WITH ARCHITECT OF RECORD.
24. PRIOR TO CONSTRUCTION COORDINATE AND CONFIRM ALL UTILITIES POINT OF CONNECTION, INVERT ELEVATION. PROVIDE SHOP DRAWINGS. SHOP DRAWINGS SHALL INCLUDE VERIFICATION, LOCATION OF EXISTING AND NEW PIPES AND INVERT ELEVATION.
25. KEEP ONE SET OF PLANS AT THE JOB SITE TO RECORD/MARK-UP ANY AND ALL CHANGES DURING CONSTRUCTION AND PROVIDE A COMPLETE SET OF MARK-UP AS-BUILT DRAWINGS TO ARCHITECT OF RECORD AT COMPLETION OF CONSTRUCTION. ATTACHING RFI(S), RESPONSE TO RFI(S), AND CCD(S) TO DRAWINGS IS NOT ACCEPTABLE UNLESS IS A MARKED-UP COPY OF CONSTRUCTION DOCUMENTS.
26. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD IN SUFFICIENT TIME TO BE INCORPORATED INTO THE BID DOCUMENTS.

PLUMBING ABBREVIATIONS

ABBREV.	DESCRIPTION
AD/AP	ACCESS DOOR/ACCESS PANEL
D	DRAIN
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DWGS.	DRAWINGS
EXIST,(E)	EXISTING
FS	FLOOR SINK
IE	INVERT ELEVATION
MIN	MINIMUM
(N)	NEW
NTS	NOT TO SCALE
POC	POINT OF CONNECT
POD	POINT OF DISCONNECT
TDL	TOTAL DEVELOPED LENGTH
TYP.	TYPICAL
VTR	VENT THRU ROOF
W	WASTE

PLUMBING SYMBOLS & ABBREVIATIONS

SYMBOLS	ABBREV.	DESCRIPTION
	DCW	DOMESTIC COLD WATER PIPING
	DHW	DOMESTIC HOT WATER PIPING
	S/W	SOIL / WASTE PIPE BELOW FLOOR OR GRADE
	V	VENT PIPING
GW	GW	GREASE WASTE
TP	TP	TRAP PRIMER PIPE
	POC	POINT OF CONNECTION
		REMOVE EXISTING EQUIPMENT OR PIPING
	CL	CAPPED LINE
	DN	DOWN OR DROP
	UP	RISE OR RISER
WCO	WCO	WALL CLEAN OUT
CO	CO	CLEAN OUT
FCO	FCO	FLOOR CLEAN OUT
COTG	COTG	CLEAN OUT TO GRADE
		SYMBOL, SEE EQUIPMENT SCHEDULE
	POD	POINT OF DISCONNECT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
		PIPING OR EQUIPMENT TO BE DEMOLISH
	SOV	SHUT-OFF VALVE
	TP	TRAP PRIMER

SHEET INDEX

PLUMBING FIXTURE AND EQUIPMENT CONNECTION SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING	MIN. CONNECTION SIZE				REMARKS
			WASTE	VENT	DCW	DHW	
FS 1	FLOOR SINK: "J.R. SMITH" FLOOR SINK MODEL #3110 WITH DUCO CAST IRON FLANGED RECEPTOR WITH SEEPAGE HOLES 12x12 6" DEEP FLOOR SINK. ACID RESISTANT COATED INTERIOR, NICKEL BRONZE RIM AND SECURED GRATE. ALUMINUM DOME BOTTOM STRAINER. WITH 1/2" MAX. FLOOR DRAIN GRATE OPENINGS IN ALL DIRECTIONS IN PATH OF TRAVEL OR PEDESTRIAN WAYS TO COMPLY WITH 11B-302.3. INSTALL FLOOR SINK FLUSH WITH FINISH FLOOR.	FLOOR	4"	1-1/2"	--	--	1 2
FD 1	FLOOR DRAIN: ZURN MODEL # Z415B-113, CAST IRON BODY WITH BOTTOM OUTLET, POLISHED NICKEL BRONZE STRAINER. 1/4" MAX. GRATE OPENING PER 2022 CBC 11B-608.9.	FLOOR	2"	1-1/2"	--	--	1 2
TP 1	TRAP PRIMER: "WATTS SERIES LFTP300 WITH BUILT IN VACCUM BREAKER, LEAD FREE. MOUNT INSIDE THE WALL AND PROVIDE ACCESS DOOR PANEL AT HEIGHT PER MANUFACTURER'S GUIDE LINES AND COORDINATION WITH ARCHTITECT.	--	--	--	1/2"	--	1 2

1 PROVIDE ALL REQUIRED MOUNTING HARDWARE AND DRAIN FOR A COMPLETE INSTALLATION, FOLLOW MANUFACTURER'S INSTALLATION GUIDE LINE.
2 CONTRACTOR TO VERIFY AND INSTALL PLUMBING FIXTURES AS NOTED OR APPROVED EQUAL.

PMPE CONSULTANTS MECHANICAL ENGINEER
2151 RIVIERA DRIVE, SUITE 216, SAN DIEGO, CA 92123
TEL: (858) 541-0000 FAX: (858) 541-0002
Consultant

REGISTERED PROFESSIONAL ENGINEER RAY PAJOUHESH MECHANICAL STATE OF CALIFORNIA M27488 EXP.:06/30/23
Engineer

studiowc ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201, Encinitas, California 92024
Telephone: (760) 632-0600 Fax: (760) 452-7941

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LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

PLUMBING LEGEND, GENERAL NOTES, DETAILS AND FIXTURE SCHEDULE

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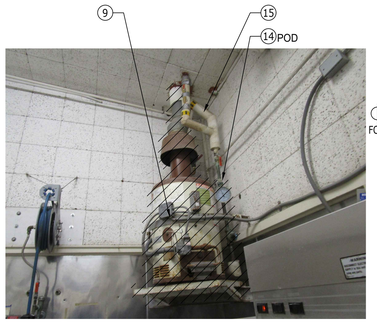
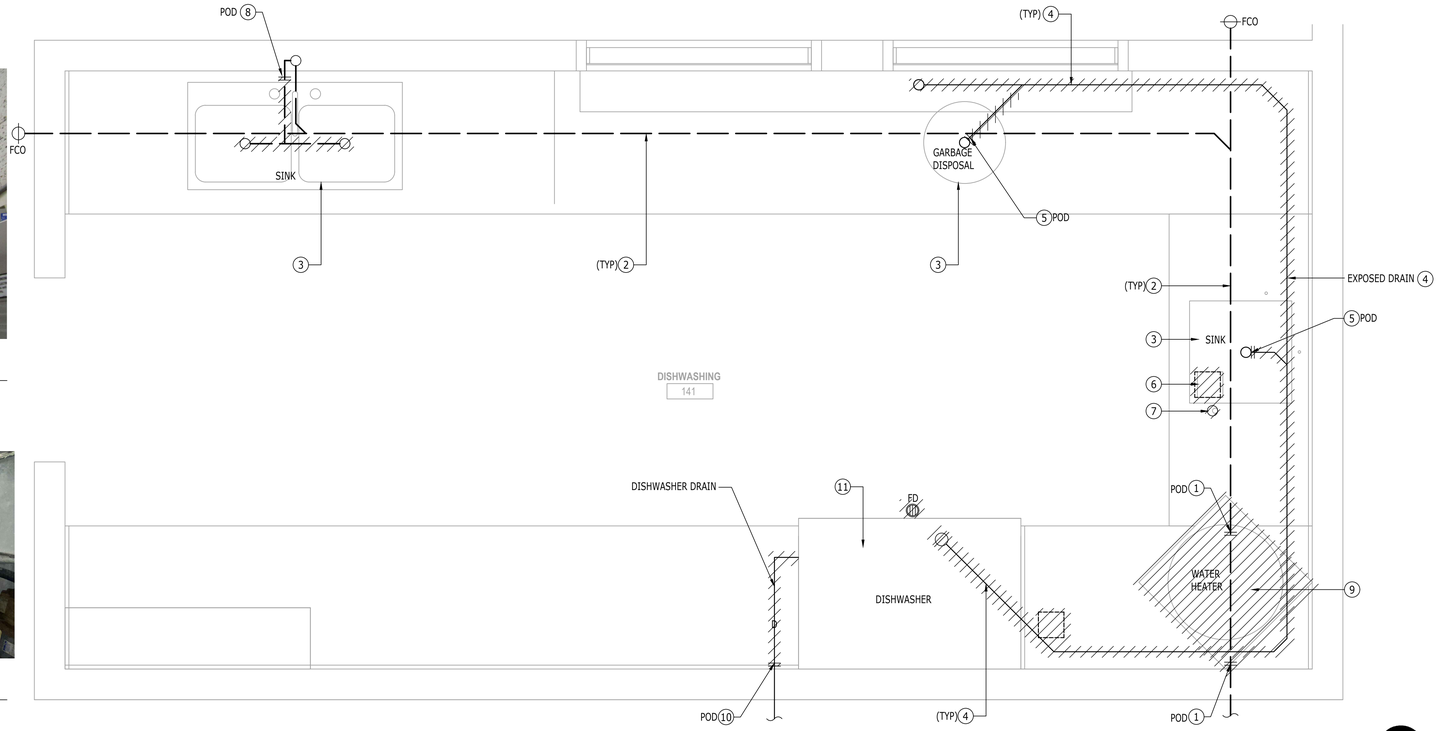


PICTURE 1

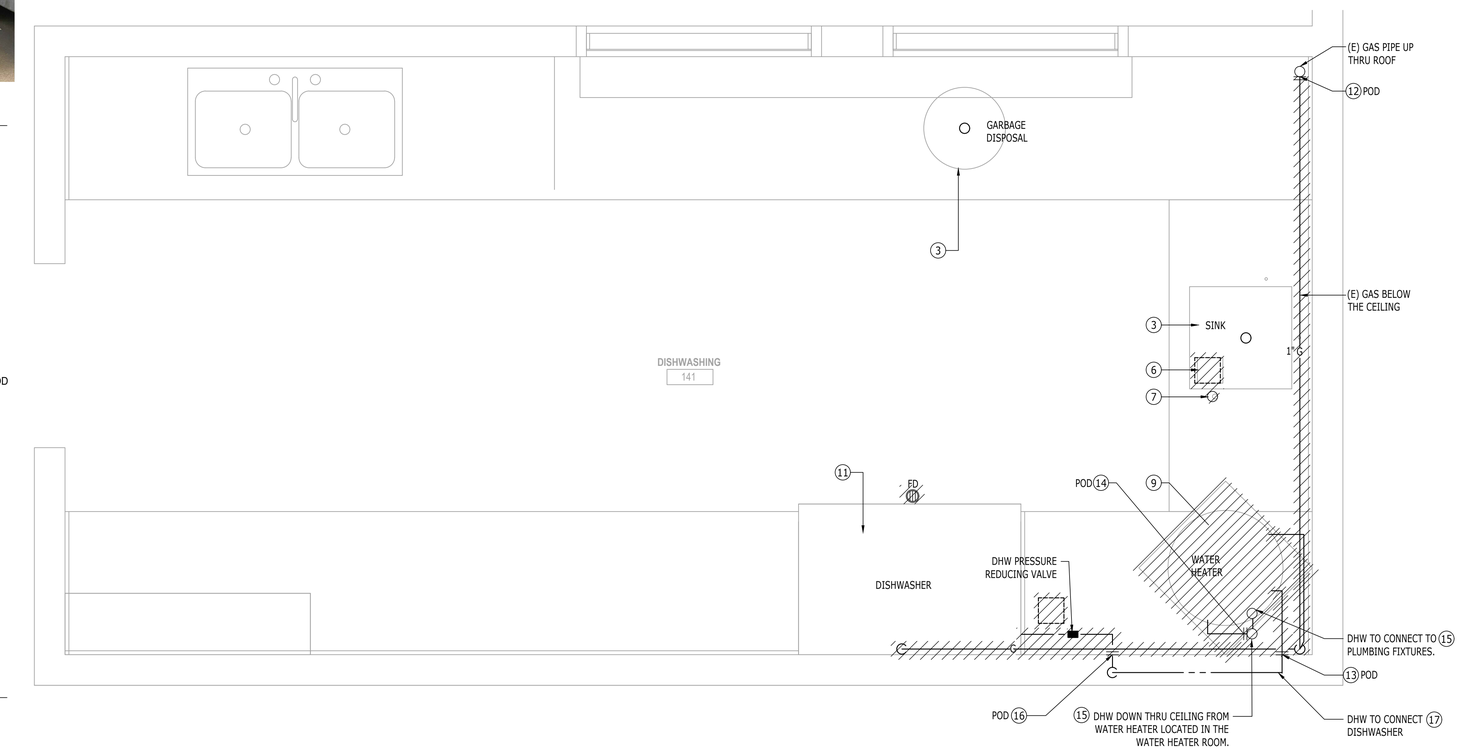
PICTURE 2

PICTURE 3

PICTURE 4



DISHWASHER-ENLARGED PLUMBING DEMOLITION PLAN (WASTE AND VENT) | 1" = 1'-0" | 1



DISHWASHER-ENLARGED PLUMBING DEMOLITION PLAN (WATER AND GAS) | 1" = 1'-0" | 2

DEMOLITION KEY NOTES

1. WASTE POINT OF DISCONNECT. REMOVE AND DEMOLISH WASTE PIPE BETWEEN POINT OF DISCONNECT. FIELD VERIFY EXACT POD.
2. EXISTING WASTE PIPE SHALL REMIAN IN PLACE AND ABANDONED.
3. PLUMBING FIXTURES SHALL REMAIN IN PLACE AND PROTECTED.
4. REMOVE AND DEMOLISH EXISTING EXPOSED DRAIN INCLUDING SUPPORTS AND ACCESSORIES.
5. DRAIN POINT OF DISCONNECT. REMOVE AND DEMOLISH DRAIN PIPE DOWNSTREAM OF POINT OF DISCONNECTION. FIELD VERIFY EXACT LOCATION.
6. REMOVE AND DEMOLISH ABANDONED GREASE TRAP BELOW THE GROUND. FIELD VERIFY EXACT LOCATION.
7. REMOVE AND DEMOLISH EXPOSED PIPE. POINT OF DISCONNECT SHALL BE BELOW THE GROUND. PROVIDE CAP AT POD.
8. WASTE POINT OF DISCONNECT. REMOVE AND DEMOLISH WASTE PIPE FROM POD TO WHERE IT CONNECTS TO THE TWO COMPARTMENT SINK. POD SHALL BE INSIDE THE WALL. PROVIDE CAP AND ESCUTCHEON. FIELD VERIFY EXACT POD.
9. REMOVE AND DEMOLISH WATER HEATER INCLUDING SUPPORTS, HANGERS, VALVES AND ALL ACCESSORIES. DISCONNECT WATER PIPES AND REMOVE AND DEMOLISH.
10. WASTE POINT OF DISCONNECT. REMOVE AND DEMOLISH WASTE PIPE FROM POD UP TO WHERE IT CONNECT TO THE DISHWASHER. POD SHALL BE INSIDE THE WALL. PROVIDE CAP AND ESCUTCHEON. FIELD VERIFY EXACT POD.
11. FOR DISHWASHER DEMOLITION SCOPE OF WORK. REFER TO FOOD CONSULTANT DRAWINGS.
12. GAS POINT OF DISCONNECT BELOW THE CEILING. REMOVE AND DEMOLISH ALL GAS PIPE DOWNSTREAM OF POINT OF DISCONNECT INCLUDING SUPPORTS AND HANGERS. PROVIDE A CAP AND SHUT-OFF VALVE AT POD. FIELD VERIFY EXACT POD.
13. REMOVE AND DEMOLISH DHW FROM THE BOOSTER HEATER ALL THE WAY DOWN TO THE WALL. PROVIDE CAP AT POD. FIELD VERIFY EXACT POD.
14. DHW POINT OF DISCONNECT. POD SHALL BE ON THE PIPE RISER AT THE UNION. REMOVE AND DEMOLISH DHW DOWNSTREAM OF POINT OF DISCONNECT. FIELD VERIFY EXACT POD.
15. EXISTING DHW PIPE RISERS SHALL REMAIN IN PLACE AND PROTECTED.
16. REMOVE AND DEMOLISH DHW FROM POINT OF DISCONNECT AND ALL THE WAY DOWN TO THE DISHWASHER INCLUDING PRESSURE REGULATOR, VALVES AND ACCESSORIES. FIELD VERIFY EXACT POD AND PROVIDE CAP.
17. DHW INSIDE THE WALL SHALL REMAIN IN PLACE AND ABANDONED.

GENERAL NOTES

1. SYSTEMS SHOWN ON 1 &2/P2.1 INCLUDING PLUMBING FIXTURES, PIPES, VALVES AND ACCESSORIES ARE EXISTING AND PER AS-BUILT DRAWINGS. PRIOR TO BID, FIELD VERIFY QUANTITY, SIZE AND EXACT LOCATION. IF THERE ARE DISCREPANCIES. IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD IN SUFFICIENT TIME TO BE INCORPORATED INTO THE BID DOCUMENTS.
2. PRIOR TO START WITH DEMOLITION SCOPE OF WORK, FIELD VERIFY EXACT LOCATION AND ELEVATION OF PIPES, VALVES AND ACCESSORIES.
3. PRIOR TO START OF CONSTRUCTION, EMPLOY AN UTILITY DETECTOR COMPANY "CPL" OR SIMILAR TO LOCATE EXISTING UNDERGROUND PIPING AND IDENTIFY PIPING POINT OF DISCONNECTION CONNECTION AND OTHER UNDERGROUND UTILITIES ALONG THE PATH OF DEMOLITION AND NEW WORK. IF THERE ARE ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND AS SHOWN ON PLANS, IT SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT OF RECORD PRIOR TO CONSTRUCTION.
4. REMOVE WALLS AND SAW CUT-FLOOR AS NEEDED FOR REMOVAL AND INSTALLATION OF PIPING, EQUIPMENT, AND INSTALLATION OF NEW FIXTURES AND PIPING. PATCH WALLS AND FLOOR TO MATCH EXISTING. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND WALL/FLOOR AREAS TO BE PATCHED.
5. FIELD VERIFY EXACT POINT OF DISCONNECTION.
6. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD INSUFFICIENT TIME TO INCORPORATED INTO THE BID.
7. ALL DEMOLITION SHALL COMPLY WITH 2019 CALIFORNIA BUILDING CODE CHAPTER 33 "SAFEGUARDS DURING CONSTRUCTION" AND 2019 CALIFORNIA FIRE CODE CHAPTER 33 "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION".

Revision | Date

PMPE CONSULTANTS MECHANICAL ENGINEER
(858) 694-0800 (858) 694-0880
7710 BALBOA AVE, SUITE 216
SAN DIEGO, CA 92111
FAX: (858) 847-2802
Consultant

REGISTERED PROFESSIONAL ENGINEER
RAY PAJOUHESH MECHANICAL
M27488
EXP:06/30/23
STATE OF CALIFORNIA
Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201 Encinitas, California 92024
Telephone: (760) 452-8680 Fax: (760) 452-7341

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
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PLUMBING DEMOLITION FLOOR PLANS

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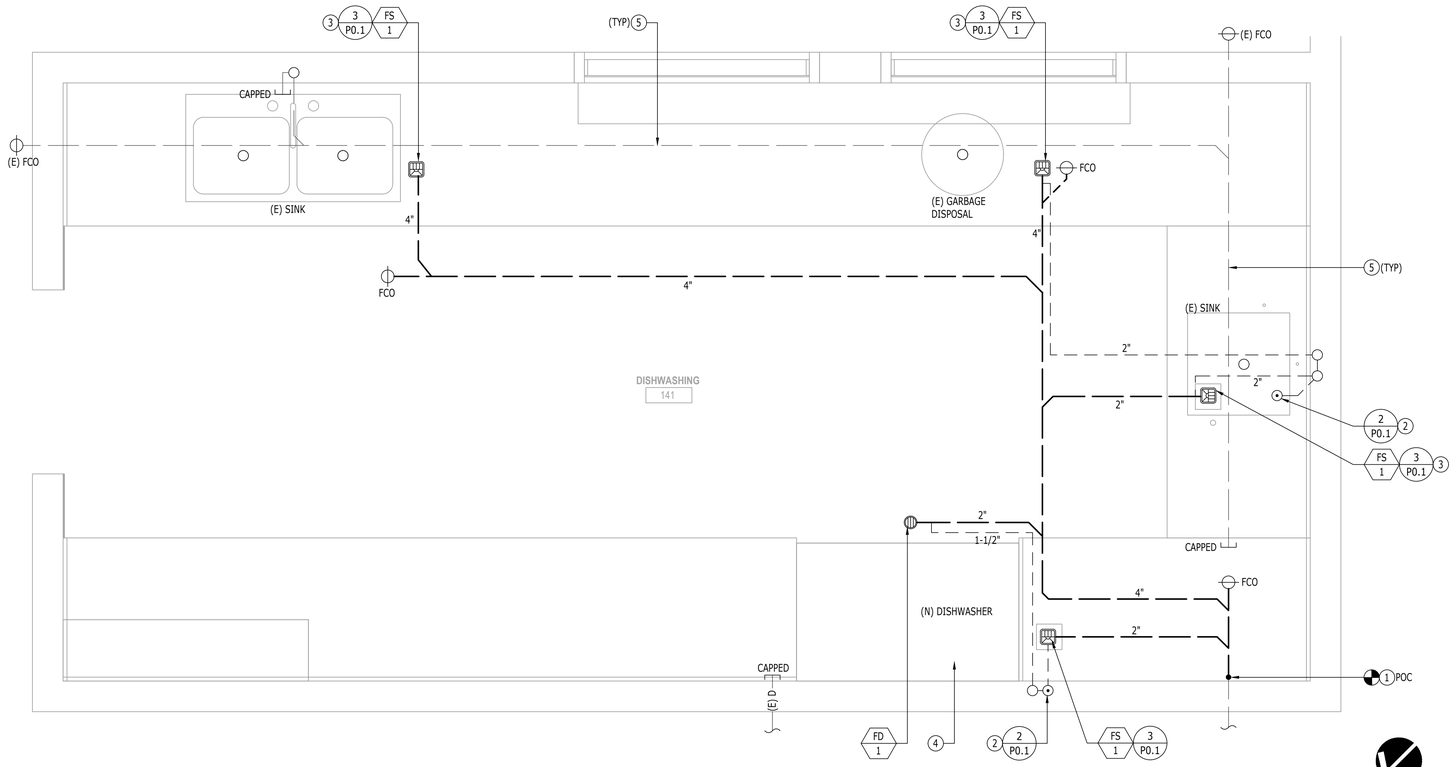
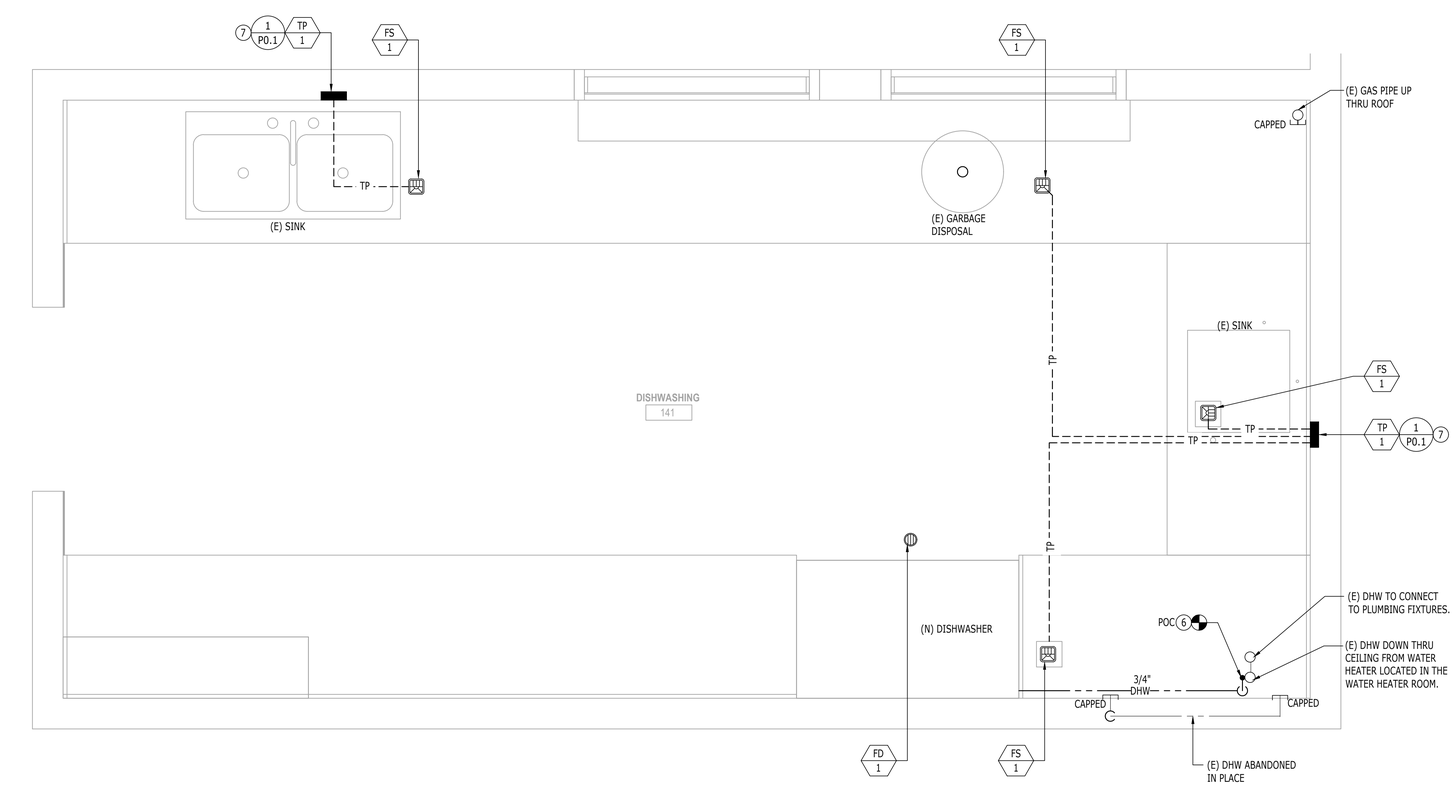
P2.1



DISHWASHER-ENLARGED PLUMBING RENOVATION PLAN (WASTE AND VENT) | 1" = 1'-0" | 1



DISHWASHER-ENLARGED PLUMBING RENOVATION PLAN (WATER AND GAS) | 1" = 1'-0" | 2

RENOVATION KEY NOTES

1. WASTE POINT OF CONNECTION TO EXISTING WASTE PIPE BELOW THE GROUND. FIELD VERIFY EXACT POC AND INVERT ELEVATION.
2. 2" VENT THRU ROOF. IN (E) WALL CAVITY, SEE ARCHITECTURAL FOR DEMO AND REPLACEMENT OF FINISHES. CORE (E) JOIST AT CENTER IN CEILING CAVITY TO LOCATE VENT AWAY FROM (E) PARAPET, MIN. 1'-0" AWAY.
3. PROVIDE NEW P-TRAP, FITTINGS, AND ACCESSORIES FOR EXISTING FIXTURES AND ROUTE DRAIN TO SPILL INTO THE FLOOR SINK WITH AN AIR GAP. FOR ADDITIONAL INFORMATION REFER TO KITCHEN CONSULTANTS DRAWINGS.
4. DISHWASHER DRAIN SHALL SPILL INDIRECTLY TO THE FLOOR SINK. FOR ADDITIONAL INFORMATION REFER TO KITCHEN CONSULTANTS DRAWINGS.
5. EXISTING WASTE PIPE SHALL REMAIN IN PLACE AND ABANDONED.
6. DHW POINT OF CONNECTION TO EXISTING DHW PIPE RISER. EXTEND DHW PIPE TO CONNECT TO NEW DISHWAHSER. PROVIDE TEMPERATURE CONTROL VALVE AND SHUT-OFF VALVE AT POINT OF CONNECTION. FIELD VERIFY EXACT LOCATION.
7. EXTEND 1/2" DCW FROM NEAREST LOCATION TO CONNECT TO TRAP PRIMER. PROVIDE ACCESS PANEL AND COORDINATE WITH ARCHITECT OF RECORD FOR EXACT LOCATION.VERIFY QUANTITY OF DISTRIBUTION UNITS PER TRAP PRIMER PRIOR TO PURCHASE.

GENERAL NOTES

1. REMOVE WALLS AND SAW CUT-FLOOR AS NEEDED FOR REMOVAL AND INSTALLATION OF PIPING, EQUIPMENT, AND INSTALLATION OF NEW FIXTURES AND PIPING. PATCH WALLS AND FLOOR TO MATCH EXISTING. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND WALL/FLOOR AREAS TO BE PATCHED.
2. FIELD VERIFY EXACT POINT OF CONNECTION AND INVERT ELEVATION.
3. FOR PIPE SIZES AND PLUMBING FIXTURES REFER TO PLUMBING SCHEDULE, SHEET P0.1.
4. PROVIDE ACCESS PANELS FOR TRAP PRIMER. COORDINATE WITH ARCHITECT FOR EXACT LOCATION.
5. ANY ITEMS REQUIRING CLARIFICATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD INSUFFICIENT TIME TO INCORPORATED INTO THE BID.

Revision	Date

PMPE CONSULTANTS MECHANICAL ENGINEER
2151 HANCOCK STREET, SUITE 216 (858) 444-0800
SAN DIEGO, CA 92110 FAX: (858) 847-0802
Consultant

M27488 EXP.:06/30/23 REGISTERED PROFESSIONAL ENGINEER RAY PAJOUHESH MECHANICAL STATE OF CALIFORNIA
Engineer

studiowc ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201, Encinitas, California 92024
Telephone: (760) 632-0600 Fax: (760) 452-7941

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

PLUMBING RENOVATION FLOOR PLANS

Drawn: Author
Checked: Checker
Date: Issue Date
Job: LMSV-LMAA-01

P2.2

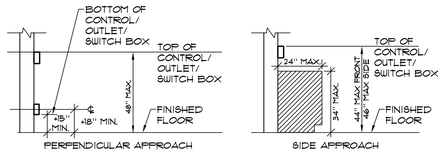
ABBREVIATIONS

A	AMPERE (AMPS)
AC	ALTERNATING CURRENT
AF	AMPS-FRAME (RATING)
AIC	AMP INTERRUPTING CURRENT
AM	AMMETER
AS	AMP SWITCH (FUSED SWITCH RATING)
AT	AMPS-TRIP (RATING)
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CO	CONDUIT ONLY
CT	CURRENT TRANSFORMER
CU	COPPER
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DWG	DRAWING
EX	EXISTING
FLA	FULL LOAD AMPS
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
GFI	GROUND FAULT INTERRUPTER
GRD/GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ
KW	KILOWATT
LCL	LONG CONTINUOUS LOAD
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MCM (KCM)	THOUSAND CIRCULAR MILS
MECH	MECHANICAL
NC	NORMALLY CLOSED
NF	NON-FUSED
NO	NORMALLY OPEN/NUMBER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
P	POLE
PH	PHASE
POC	POINT OF CONNECTION
PRS	PVC COATED RIGID STEEL (CONDUIT)
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE DUCT
SWBD	SWITCHBOARD
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLTAMPERES
VM	VOLTMETER
VL	VERIFY LOCATION
W	WIRE/WATTS
WP	WEATHERPROOF (NEMA TYPE 3R)
WT	WATERTIGHT
XP	EXPLOSION PROOF (RATED FOR AREA HAZARD)

ELECTRICAL SYMBOL LEGEND

POWER CONTINUED

- DUPLEX RECEPTACLE, FLOOR MOUNTED
- DUPLEX RECEPTACLE, WALL MOUNTED, +18" A.F.F. (U.O.N.)
- HORZ. RECEPTACLE, WALL MOUNTED HORIZONTALLY, +18" A.F.F. (U.O.N.)
- FOURPLEX RECEPTACLE, WALL MOUNTED, +18" A.F.F. (U.O.N.)
- RECEPTACLE MOUNTED +6" ABOVE COUNTER BACKSPLASH SEE ARCHITECTURAL PLANS FOR REQUIRED MOUNTING HEIGHT PRIOR TO ROUGH-IN.
- LCD PROVIDE (2) DUPLEX RECEPTACLE CEILING MOUNTED LOCATE ADJACENT TO PROJECTOR. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
- USB RECEPTACLE WITH (2) USB PORTS MOUNTED +6" ABOVE COUNTER BACKSPLASH. SEE ARCHITECTURAL PLANS FOR REQUIRED MOUNTING HEIGHT PRIOR TO ROUGH-IN. EATON #TR7756.
- SINGLE RECEPTACLE, WALL MOUNTED +18" A.F.F. (U.O.N.)
- C SINGLE RECEPTACLE (CLOCK HANGER TYPE) WALL MOUNTED +7'-0" A.F.F. (U.O.N.)
- SWITCH CONTROLLED DUPLEX RECEPTACLE +18" U.O.N.
- GFI DUPLEX GROUND FAULT INTERRUPTING RECEPTACLE +18" A.F.F. (U.O.N.)
- DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT +18" A.F.F. (U.O.N.)
- WP DUPLEX RECEPTACLE IN WEATHERPROOF ENCLOSURE +18" A.F.F. (U.O.N.)
- WP/L DUPLEX RECEPTACLE IN WEATHERPROOF "LOCKING" ENCLOSURE +18" A.F.F. (U.O.N.) (SEE TYPICAL DETAILS E3 SERIES SHEETS AND SPECIFICATIONS FOR REQUIRED TYPE).
- IG DUPLEX RECEPTACLE (ORANGE) ISOLATED GROUND WALL MOUNTED +18" A.F.F. (U.O.N.)
- IG FOURPLEX RECEPTACLE (ORANGE) ISOLATED GROUND WALL MOUNTED +18" A.F.F. (U.O.N.)
- TP DUPLEX RECEPTACLE SAFETY TYPE / TAMPER PROOF WALL MOUNTED +18" A.F.F. (U.O.N.)
- J / JH JUNCTION BOX, CEILING OR WALL MOUNTED
- HDH HAND DRYER CONNECTION, SEE ARCHITECTURAL FOR MOUTNING HEIGHT.
- FUSED DISCONNECT SWITCH, WHERE SHOWN NF = NON-FUSED.
- SM MANUAL MOTOR STARTER +48" A.F.F. OR ON EQUIPMENT (U.O.N.)
- MOTOR CONNECTION, NUMERAL INDICATES HORSEPOWER.
- AC-1 MECHANICAL EQUIPMENT TAG (SEE MECHANICAL DRAWINGS FOR DESCRIPTION)
- CONDUIT AND WIRE, CONCEALED IN CEILING OR WALL
- CONDUIT AND WIRE, CONCEALED IN OR UNDER FINISHED FLOOR OR UNDER FINISHED GRADE.
- FLEXIBLE CONDUIT CONNECTION
- BRANCH CIRCUIT HOMERUN TO PANEL. SLASHES INDICATE NUMBER OF CONDUCTORS. EQUIPMENT GROUND WIRE NOT INDICATED U.O.N. #12 CONDUCTORS ARE MINIMUM, NO HASH MARKS = MIN (2) #12
- 3/4" CONDUIT STUBBED FROM DEVICE TO ABOVE ACCESSIBLE CEILING
- #8 BRANCH CIRCUIT HOMERUN, NUMBER INDICATES INCREASED CONDUCTOR SIZE, CONDUCTORS SHALL REMAIN AS INDICATED FOR SIZE THROUGHOUT THE ENTIRE CIRCUIT.
- PANELBOARD, SURFACE MOUNTED.
- PANELBOARD, RECESSED
- T STEP-DOWN TRANSFORMER
- DISTRIBUTION SWITCHBOARD



NOTES:

1. MAINTAIN MINIMUM 30"X48" CLEAR FLOOR SPACE AT EACH APPROACH.
2. FORWARD OR FRONT APPROACH FOR DEVICES MOUNTED ABOVE COUNTERS ASSUMES THAT DIRECTLY BELOW THE DEVICE, THE COUNTER HAS A 30" MIN. WIDTH X 27" MIN. HIGH X 19" MIN. DEEP CLEAR OPENING. CBC SECTIONS 11B-306 AND 11B-308.

MOUNTING HEIGHT OVER OBSTRUCTION — 4 / E1.0

NO SCALE

GENERAL PROJECT NOTES:

1. UNLESS WHERE OTHERWISE NOTED, ALL WORK INDICATED ON THESE DRAWINGS SHALL BE CONSIDERED NEW WORK.
2. UNLESS WHERE OTHERWISE NOTED, ALL DIMENSIONS ARE TO BE CENTERLINE OF THE DEVICE.

GENERAL DEMOLITION NOTES:

1. ALL ELECTRICAL EQUIPMENT, EXPOSED RACEWAY AND CONDUIT, OUTLET BOXES AND RINGS, AND DEVICES ARE TO BE REMOVED, EXCEPT WHERE SHOWN TO REMAIN. EXISTING WIRING, WHETHER EXPOSED, IN CONDUIT OR RACEWAY IS TO BE REMOVED TO THE GREATEST EXTENT POSSIBLE.
2. THE ELECTRICAL CONTRACTOR IS TO DIRECT THE REMOVAL OF THE ABOVE LISTED WORK.

REGISTERED PROFESSIONAL ENGINEER — WILLIAM CODESETTA — No. E 14781 — Exp. 6-30-2025 — ELECTRICAL — STATE OF CALIFORNIA

#23034 5/15/2023

JOHNSON CONSULTING ENGINEERS, INC.
Power | Lighting | Multimedia
Communications | Data Networking
12875 Brookprinter Place, Suite 300
Poway, CA 92064
P 858.679.4030 | F 858.513.0559
www.jce-inc.com

Revision / Date

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone (760)753-6800 Fax (760)452-7541

Consultant

Engineer

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

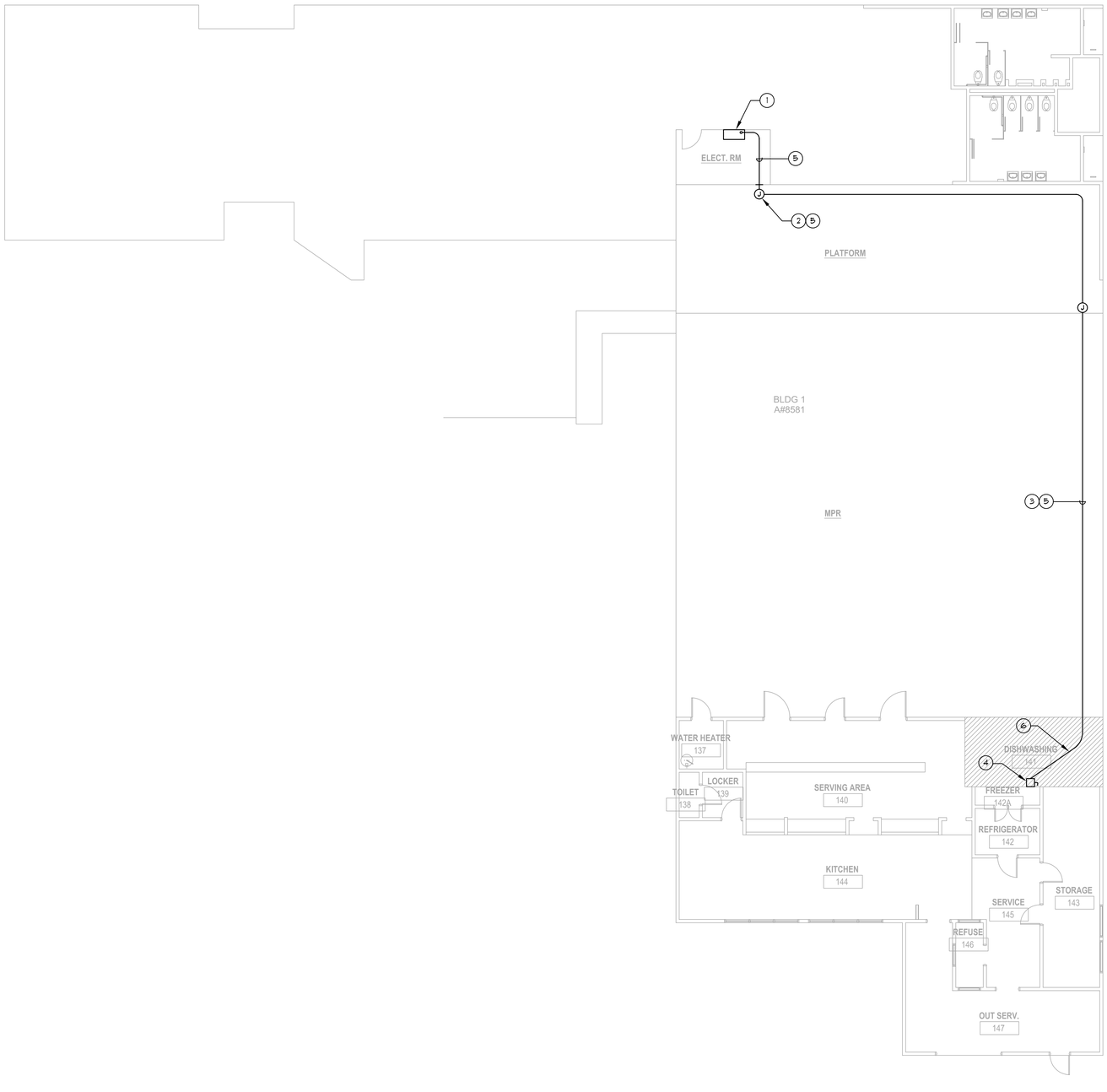
ELECTRICAL LEGEND AND NOTES

Drawn: Author
Checked: Checker
Date:
Job:

E1.0

KEY NOTES:

1. EXISTING DISTRIBUTION PANEL 'DH1', 277/480V, 3P, 4W, 42,000 AIC GE SPECTRUM SERIES. PROVIDE NEW 90 AMP, 3 POLE BREAKER IN EXISTING SPACE.
2. EXTEND CONDUIT UP TO PLATFORM AREA CEILING AND RUN EXPOSED TO MPR CEILING.
3. ROUTE CONDUITS EXPOSED ACROSS MPR SPACE CEILING. ALL CONDUITS AND FITTING SHALL BE 'WHITE' COLOR TO MATCH THE CEILING.
4. PROVIDE NEMA 4X, 100 AMP/3 POLE DISCONNECT SWITCH WITH 90 AMP FUSES. LOCATE +8'-0" ON WALL.
5. 1-1/4"C., (4) #1, (1) #6 GROUND.
6. PROVIDE PENETRATION FIRE STOPPING. PAINT TO MATCH EXISTING WALL COLOR.



OVERALL FLOOR PLAN | 1/8" = 1'-0" | 1

#23034 5/15/2023

JOHNSON CONSULTING ENGINEERS, INC.
Power| Lighting| Multimedia
Communications| Data Networking
12875 Brookprinter Place, Suite 300
Poway, CA 92064
P 858.679.4030| F 858.513.0559
www.jce-inc.com

REGISTERED PROFESSIONAL ENGINEER — No. E 14781 — Exp. 6-30-2025 — ELECTRICAL — STATE OF CALIFORNIA

Revison	Date

Consultant

Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone (760)753-4880 Fax (760)452-7541

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

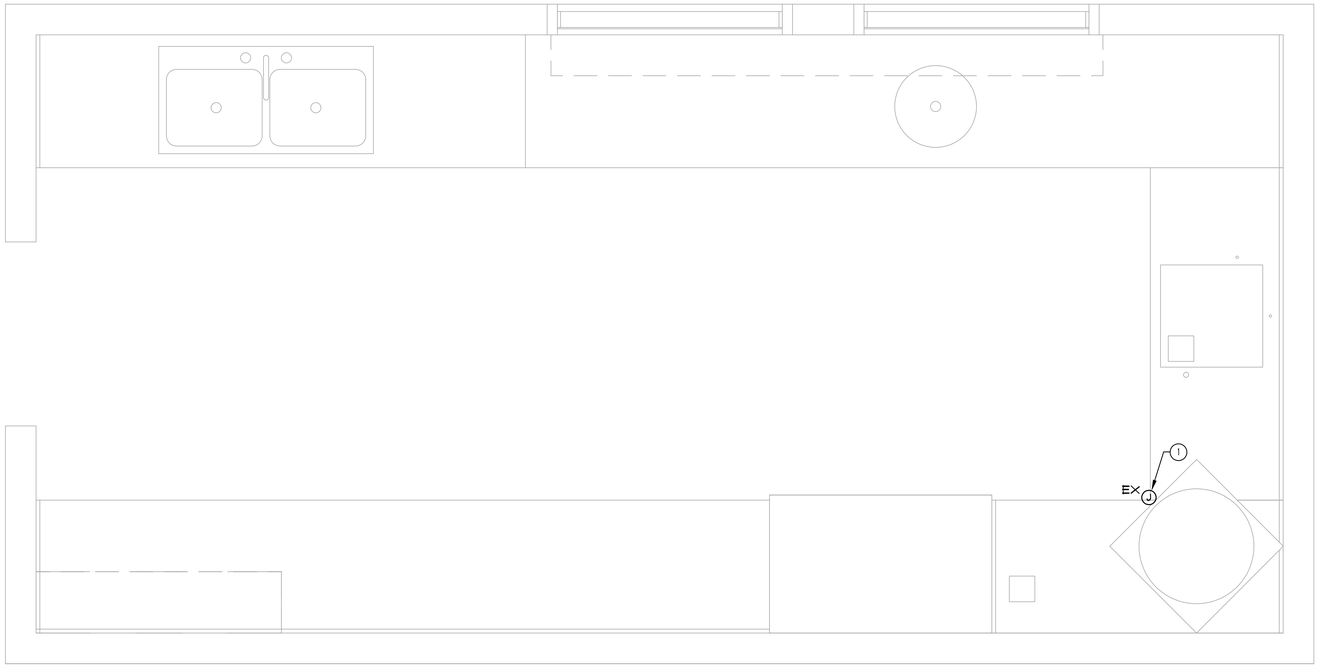
OVERALL FLOOR PLAN

Drawn: Author
Checked: Checker
Date:
Job:

E1.1

DEMOLITION KEY NOTES:

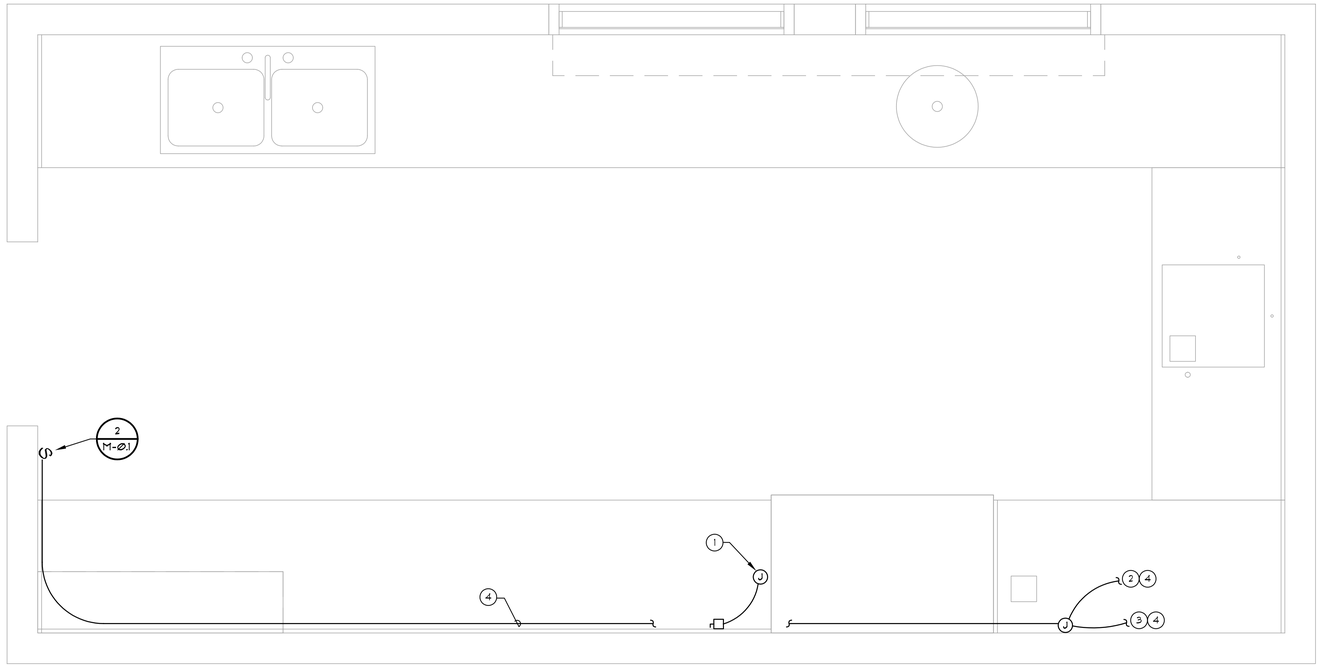
1. DISCONNECT EXISTING WATER HEATER TO BE REMOVED AS REQUIRED.



ENLARGED FLOOR PLAN-DEMO | 1" = 1'-0" | 2

KEY NOTES:

1. PROVIDE LIQUIDTIGHT FLEX CONNECTION TO NEW DISHWASHER. FIELD VERIFY EXACT LOCATION.
2. INTERCEPT EXISTING REMOVED WATER HEATER CIRCUIT 'BB'-18.
3. EXTEND CONDUIT TO NEW EXHAUST FAN. ON ROOF PROVIDE NEMA 3R MANUAL MOTOR STARTER SWITCH AT FAN AND CONNECT TO NEW ON/OFF SWITCH LOCATED AT ENTRY.
4. 3/4"C. RIGID GALVANIZED STEEL AND WIRING MOUNTED HIGH ON EXISTING WALL.



ENLARGED FLOOR PLAN-NEW | 1" = 1'-0" | 1

REGISTERED PROFESSIONAL ENGINEER
JOHN D. COESENS
No. E 14781
Exp. 6-30-2025
ELECTRICAL
STATE OF CALIFORNIA

#23034 5/15/2023

JOHNSON CONSULTING ENGINEERS, INC.
Power | Lighting | Multimedia
Communications | Data Networking
12875 Brookprinter Place, Suite 300
Poway, CA 92064
P 858.679.4030 | F 858.513.0559
www.jce-inc.com

Revison	Date
Consultant	
Engineer	

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste. 201, Encinitas, California 92024
Telephone (760)753-4880 Fax (760)452-7541

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

DEMO FLOOR PLAN / NEW FLOOR PLAN

Drawn: Author
Checked: Checker
Date:
Job:

E1.2

SECTION 26 01 00

ELECTRICAL GENERAL PROVISIONS

PART 1– GENERAL

SUMMARY

1.1 This Division of the specification outlines the provisions of the contract work to be performed under this Division.

1.2 This Section applies to and forms a part of each section of specifications in Division 26 and all work performed under Division 26, 27 and 28.

1.3 In addition, work in this Division is governed by the provisions of the bidding requirements, contract forms, general conditions and all sections under general requirements.

1.4 These specifications contain statements which may be more definitive or more restrictive than those contained in the General Conditions. Where these statements occur, they shall take precedence over the General Conditions.

1.5 Where the words 'provide' or 'provision' are used, it shall be definitely interpreted as 'furnishing and installing complete in operating condition'. Where the words 'as indicated' or 'as shown' are used, it shall mean as shown on contract drawings.

1.6 Where items are specified in the singular, this Division shall provide the quantity as shown on drawings plus any spares or extras mentioned on drawings or specifications. All specified and supplied equipment shall be new.

CONTRACTOR QUALIFICATIONS

1.7 The Contractor shall have a current California C-10 Electrical Contractor's license and all individuals working on this project shall have passed the Department of Industrial Relations Division of apprenticeship Standards – "Electrician Certification Program."

STANDARDS

1.8 The following standard publications of the latest editions enforced, and supplements thereto shall form a part of these specifications. All electrical work must, as a minimum, be in accordance with these standards.

1.8.1 2019 California Electrical Code (CEC), Part 3 Title 24 CCR.

WORK AND MATERIALS

1.9 Unless otherwise specified, all materials must be new and of the best quality. Materials previously incorporated into other projects, salvaged, or refurbished are not considered new. Perform all labor in a thorough and workmanlike manner.

1.10 All materials provided under the contract must bear the UL label where normally available. Note that this requirement may be repeated under equipment specifications. In general, such devices as will void the label should be provided in separate enclosures and wired to the labeled unit in proper manner.

SHOP DRAWINGS AND SUBMITTALS

1.11 Submit shop drawings and all data in accordance with Division 1 of these specifications and as noted below for all equipment provided under this Division.

1.12 Shop drawings submittal demonstrate to the Architect that the Contractor understands the design concept. The Contractor demonstrates their understanding by indicating which equipment and material they inten to furnish and install and by detailing the fabrication and installation methods of material and equipment he intends to use. If deviations, discrepancies, or conflicts etween submittals and specifications are discovered either prior to or after submittals are processed, notify the Architect immediately.

EXCAVATION AND BACKFILL

1.13 All excavation and backfill shall be in accordance with Division 1 of these specifications and as noted below.

1.14 Perform all necessary excavation, shoring, and backfilling required for the proper laying of all conduits inside the building and premises, and outside as may be necessary.

1.15 Excavate all trenches open cut, keep trench banks as nearly vertical as practicable, and sheet and brace trenches where required for stability and safety. Excavate trenches true to line and make bottoms no wider than necessary to provide ample work room. Grade trench bottoms accurately. Machine grade only to the top line of the conduits, doing the remainder by hand. Do not cut any trench near or under footings without first consulting the Architect. All trenches shall be done in accordance with OSHA standards and regulations.

1.16 Backfilling shall be done with each layer compacted before another layer is added. No stones or coarse lumps shall be laid directly on a conduit or conduits.

1.17 Trenches shall be filled with the specified material. Sod, if any, shall be removed in cut sections and replaced in same manners.

1.18 Provide pumps and drainage of all open trenches for purposes of installing electrical duct and wiring.

1.19 Perform all backfilling in accordance with the requirements of and under the direction of the Geotechnical Engineer.

1.20 Where new underground trenching is required on sites or in any area where existing underground utilities exist, the Contractor shall provide an independent professional utility locating service to locate exact vertical and horizontal locations of all existing utilities. Where existing utilities are found the Contractor shall hand dig those areas to avoid disruption. The Contractor shall be responsible for immediate repairs to existing underground utilities damaged during construction. The Contractor shall repair all existing asphalt, concrete and landscape surfaces damaged or removed during construction to match their original conditions. Where trenching extends through public streets or roadways, the Contractor shall notify underground service alert in addition to the independent locating service 48 hours before start of construction to determine location of existing utilities by calling (800) 422-4133.

SECTION 26 05 19

POWER CONDUCTORS

PART 1 – GENERAL

1.1 Furnish and install wire and cable for branch circuits and feeders specified herein and as shown on the electrical drawings.

1.2 Submittals: Submit manufacturers' data for the following items:

1.2.1 All cables and terminations

PART 2 – PRODUCTS

2.1 Wire and cable Rated 120 volt to 600 volt.

2.1.1 All wire and cable shall be new, 600 volt insulated copper, of types specified below for each application. All wire and cable shall bear the UL label and shall be brought to the job in unbroken packages. Wire insulation shall be the color as specified herein and shall be type THWN-2. Insulated conductors shall be installed in all exterior exposed raceways. Conductors for branch circuit lighting, receptacle, power and miscellaneous systems shall be a minimum of No. 12 AWG. Increase conductor size to No. 10 AWG for 120 volt circuits greater than 100 feet from the panel to the load and for 277 volt circuits greater than 200 feet from the panel to the load. Circuit home-runs indicated to be larger than No. 12 must be increased the entire length of the circuit, including equipment grounding conductor. Wire sizes No. 14 through No. 10 shall be solid. No. 8 and larger shall be stranded.

PART 3 - EXECUTION

3.1 Wire and cable shall be pulled into conduits without strain using powdered soapstone, mineralac, or other approved lubricant. In no case shall wire be repulled if same has been pulled out of a conduit run for any purpose. No conductor shall be pulled into conduit until conduit system is complete, including junction boxes, pull boxes, etc.

3.2 All connections of wires shall be made as noted below:

3.2.1 Connections to outlets and switches: Wire formed around binding post of screw.

3.2.2 No. 10 wire and smaller: Circuit wiring connections to lighting fixtures and other hard wired equipment shall be made with pressure type solderless connectors, Buchanan, Scotchlock, Wing Nut, or approved equal. Alternate "WAGO" #773 series or "IDEAL" #32, 33, 34 and 39 series push wire style connectors are also acceptable.

3.3 All wiring shall be continuous without splicing unless where specifically noted on the drawings or where permitted below.

3.3.1 No. 10 wire and smaller above grade: Quantities as needed, connection made with pressure type solderless connectors, Scotchlock or equal.

3.3.2 No. 10 wire and smaller below grade: Quantities as needed, connection made with 'Raychem' long barrel compression terminals with crimping tool and quantity of crimps as recommended by manufacturer, provide 'Raychem' WCSM-S series in-line heat shrink, sealant coated splice kit. Alternate products must be UL listed for direct burial/submersible and rated to (1000V).

3.3.3 No. 8 wire and larger above grade: Quantities only where indicated, 'Raychem' long barrel compression terminals with crimping tool and quantity of crimps as recommended by manufacturer, provide 'Raychem' WCSM-S series in-line heat shrink, sealant coated splice kit. Alternate products must be UL listed for direct burial/submersible and rated to (1000V).

3.3.4 No. 8 wire and larger below grade: Quantities only where indicated, 'Raychem' long barrel compression terminals with crimping tool and quantity of crimps as recommended by manufacturer, provide 'Raychem' WCSM-S series in-line heat shrink, sealant coated splice kit. Alternate products must be UL listed for direct burial/submersible and rated to (1000V).

3.4 All wiring throughout shall be color coded as follows:

	480 volt system	208 or 240 volt system
A Phase	Brown	Black
B Phase	Orange	Red
C Phase	Yellow	Blue
Neutral	Grey	White
Ground	Green	Green

3.5 At all terminations of control wiring, the wiring shall have a numbered T&B or Brady plastic wire marker.

3.6 Cables when installed are to be properly trained in junction boxes, etc., and in such a manner as to prevent any forces on the cable which might damage the cable.

SECTION 26 05 26

GROUNDING

PART 1 – GENERAL

1.1 Furnish and install grounding and grounding conductors and electrodes as specified herein and as shown on the drawings.

1.2 Submit catalog data for all components..

PART 2 – EXECUTION

2.1 Grounding

2.1.1 All panelboard cabinets, equipment, enclosures, and complete conduit system shall be grounded securely in accordance with pertinent sections of CEC Article 250. Conductors shall be copper. All electrically operated equipment shall be bonded to the grounded conduit system. All non-current carrying conductive surfaces that are likely to become energized and subject to personal contact shall be grounded by one or more of the methods detailed in CEC Article 250. All ground connections shall have clean contact surfaces. Install all grounding conductors in conduit and make connections readily accessible for inspection.

2.1.2 The following ohmic values shall be test certified for each item listed. A written report signed and witnessed by the project IOR shall be provided to the engineer. If the ohmic value listed cannot be obtained additional grounding shall be installed to reach the value listed.

2.1.2.1 Service. . . . . .10 ohms.

2.1.2.2 Step down transformers and non-current carrying metal parts . . . . . 25 ohms.

SECTION 26 05 33

CONDUIT AND FITTINGS

PART 1 – GENERAL

1.1 Furnish and install conduit and fittings as shown on the drawings and as specified herein.

1.2 Submit Manufacturer's data on the following:

1.2.1 Conduit.

1.2.2 Fittings

PART 2 – PRODUCTS

2.1 Rigid steel conduit, intermediate metal conduit (IMC), electrical metallic tubing (EMT) and flexible metallic conduit shall be steel, hot dipped galvanized after fabrication.

2.2 PVC conduit shall be Carlon or approved equal.

2.3 Liquid tight flexible metal conduit shall be Anaconda Sealtite type UA or approved equal. Fittings shall be Appleton, Crouse-Hinds, Steel City, T&B, or equivalent.

2.4 MC type armored cable, is not permitted

2.5 All plastic conduit shall be rigid, schedule 40, heavy wall PVC. All PVC conduit shall be UL listed. Underground utility company conduits shall comply with local utility co. requirements.

PART 3 – FITTINGS

3.1 All metallic fittings, including those for EMT, flexible conduit, or malleable iron. Die cast fittings of any other material are not permitted.

3.2 Locknuts shall be steel or malleable iron with sharp clean cut threads.

3.3 Entrance seals shall be O.Z. type FSK or equivalent.

3.4 Bushings and locknuts: Where conduits enter boxes, panels, cabinets, etc., they shall be rigidly clamped to the box by locknuts on the outside, and a lock nut and plastic bushing on the inside of the box. All conduits shall enter the box squarely.

3.5 Furnish and install insulated bushings as per CEC article No. 300 - 4 (F) on all conduits. The use of insulated bushings does not exclude the use of double locknuts to fasten conduit to the box.

3.6 Transition from plastic to steel conduits shall be with PVC female threaded adaptors.

3.7 Couplings and connectors for rigid steel or IMC conduit must be threaded, or compression type (set screw fittings are not permitted).

3.8 Couplings and connectors for EMT shall be compression, watertight. Set screw connectors are not acceptable, except for systems below 120 volts.

PART 4 - EXECUTION

4.1 All branch circuits shall be installed concealed in walls or above ceilings or in concrete floor slabs. PVC conduits installed in concrete floor slabs shall transition to PVC coated rigid steel where conduits penetrate above finished grade or finished floor.

4.2 Conduit sizes for various numbers and sizes of wire shall be as required by the CEC, but not smaller than ½" for power wiring and ¾" for communications and fire alarm systems unless otherwise noted. Conduit in slab or below grade shall be ½" minimum trade size, unless otherwise identified.

4.3 Conduit size shall be such that the required number and sizes of wires can be easily pulled in and the Contractor shall be responsible for the selection of the conduit sizes to facilitate the ease of pulling. Conduit sizes shown on the drawings are minimum sizes in accordance with appropriate tables in the CEC. If because of bends or elbows a larger conduit size is required, the Contractor shall so furnish without further cost to the Owner.

4.4 The Contractor shall be entirely responsible for the proper protection of this work from the other trades on the job. When conduit becomes bent or holes are punched through same, or outlets moved after being roughed-in, the Contractor shall replace same, without additional cost to the Owner.

4.5 Rigid steel conduit or IMC shall be used as follows:

4.5.1 Exposed exterior locations.

4.5.2 Exposed interior locations below eight feet above floor, except in electrical rooms and closets.

4.5.3 In hazardous or classified areas as required by CEC.

4.6 EMT conduit shall be used for areas as follows:

4.6.1 All interior communications, signal, and data networking systems.

4.6.2 All interior power wiring systems where not required to be in rigid steel, IMC or flexible conduit.

4.7 Flexible conduit shall be used for areas as follows:

4.7.1 To connect motors, transformers, and other equipment subjected to vibration or where specifically detailed on the drawings.

4.7.2 Flexible conduit shall not be used to replace EMT in other locations where the conduit will be exposed.

4.7.3 Flexible metal conduit shall be ferrous. Installation shall be such that considerable slack is realized. The conduit shall contain separate code sized grounding conductor.

4.7.4 Liquid tight flexible conduit shall be used in conformance with CEC in lengths not to exceed 4'. For equipment connections, route the conduit at 90 degrees to the adjacent path for point of connection. The conduit shall contain separate code sized grounding conductor. Use liquid tight flexible conduit for all equipment connections exposed in possible wet, corrosive or oil contaminated areas, e.g., shops and outside areas.

4.8 Plastic conduit shall be used for all exterior underground, in slab, and below slab on grade conduit installations. Install bell ends at all conduit terminations in manholes and pull boxes. Where plastic conduit transitions from below grade to above grade, no plastic conduit shall extend above finished exterior grade, or above interior finished floor level.

4.9 Plastic conduit joints shall be made up in accordance with the manufacturer's recommendations for the particular conduit and coupling selected. Conduit joint couplings shall be made watertight. Plastic conduit joints shall be made up by applying a plastic solvent cement on the inside of a plastic fitting and on the outside of the conduit ends. The conduit and fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly.

4.10 All conduits shall be concealed wherever possible. All conduit runs may be exposed in mechanical equipment rooms, electrical equipment rooms, electrical closets, and in existing or unfinished spaces. No conduit shall be run exposed in finished areas without the specific approval of the Architect.

4.11 All raceways which are not buried or embedded in concrete shall be supported by straps, clamps, or hangers to provide a rigid installation. Exposed conduit shall be run in straight lines at right angles to or parallel with walls, beams, or columns. In no case shall conduit be supported or fastened to other pipes or installed to prevent the ready removal of other trades piping. Wire shall not be used to support conduit.

4.12 It shall be the responsibility of the Contractor to consult the other trades before installing conduit and boxes. Any conflict between the location of conduit and boxes, piping, duct work, or structural steel supports, shall be adjusted before installation. In general, large pipe mains, waste, drain, and steam lines shall be given priority.

4.13 The ends of all conduits shall be securely plugged, and all boxes temporarily covered to prevent foreign material from entering the conduits during construction. All conduit shall be thoroughly swabbed out with a dry swab to remove moisture and debris before conductors are drawn into place.

4.14 Supports: Conduit shall be supported at intervals as required by the California Electrical Code. Where conduits are run individually, they shall be supported by approved conduit straps or beam clamps. Straps shall be secured by means of toggle bolts on hollow masonry, machine screws or bolts on metal surfaces, and wood screws on wood construction. [No perforated straps or wire hangers of any kind will be permitted. Where individual conduits are routed, or above ceilings, they shall be supported by hanger rods and hangers.] Conduits installed exposed in damp locations shall be provided with clamp backs under each conduit clamp, to prevent accumulation of moisture around the conduits.

4.15 Provide cap or other sealing type fitting on all spare conduits. Conduits stubbed into buildings from underground where cable only extends to equipment, the conduit/cable end shall be sealed to prevent moisture from entering the room or space.

4.16 All conduits which are part of a paralleled feeder or branch circuit shall be installed underground.

SECTION 26 05 34

OUTLET AND JUNCTION BOXES

PART 1 – GENERAL

1.1 Furnish and install electrical wiring boxes as specified and as shown on the electrical drawings.

1.2 Submit manufacturer's data for all items.

PART 2 – PRODUCTS

2.1 Boxes shall be as manufactured by Steel City, Appleton, Raco, or approved equal.

2.2 All boxes must conform to the provisions of Article 370 of the CEC. All boxes shall be of the proper size to accommodate the quantity of conductors enclosed in the box. Minimum box size shall be 4" square x 1-½" deep.

2.3 Boxes generally shall be hot dipped galvanized steel with knockouts. Boxes on exterior surfaces or in damp locations shall be corrosion resistant, cast feralloy and shall have threaded hubs for rigid conduit and neoprene gaskets for their covers. Boxes shall be Appleton Type FS, Crouse-Hinds, or the approved equal. Conduit bodies shall be corrosion resistant, cast malleable iron. Conduit bodies shall have threaded hubs for rigid conduit and neoprene gaskets for their covers. Conduit bodies shall be Appleton Unilets, Crouse-Hinds, or the approved equal. Where recessed, boxes shall have square cut corners.

2.4 Deep boxes shall be used in wall covered by wainscot or paneling and in walls or glazed tile, brick, or other masonry which will not be covered with plaster. Through the wall type boxes shall not be used unless specifically called for. All boxes shall be nongangable. Boxes in concrete shall be of a type to allow the placing of conduit without displacing the reinforcing bars. All lighting fixture outlet boxes shall be equipped with the proper fittings to support and attach a light fixture.

2.5 Pull and junction boxes shall be code gauge boxes with screw covers. Boxes shall be rigid under torsional and deflecting forces and shall be provided with angle from framing where required. Boxes shall be 4" square with a blank cover in unfinished areas and with a plaster ring and blank cover in finished areas. Covers for flush mounted oversize boxes shall extend ¼" past boxes all around. Covers for 4" square boxes shall extend ½" past box all around.

PART 3 – EXECUTION

3.1 Boxes shall be installed where required to pull cable or wire, but in finished areas only by approval of the Architect. Boxes shall be rigidly attached to the structure, independent of any conduit support. Boxes shall have their covers accessible. Covers shall be fastened to boxes with machine screws to ensure continuous contact all around. Covers for surface mounted boxes shall line up evenly with the edges of the boxes.

3.2 Outlets are only approximately located on the plans and great care must be used in the actual location of the outlets by consulting the various detailed drawings and specifications. Outlets shall be flush with finished wall or ceiling, boxes installed symmetrically on such trim or fixture. Refer to drawings for location and orientation of all outlet boxes.

3.3 Furnish and install all plaster rings as may be required. Plaster rings shall be installed on all boxes where the boxes are recessed. Plaster rings shall be of a depth to reach the finished surface. Where required, extension rings shall be installed so that the plaster ring is flush with the finished surface.

SECTION 26 28 16

DISCONNECTS

PART 1 – GENERAL

1.1 Furnish and install all disconnect switches as shown on the drawings and as required by the CEC.

1.2 Submit manufacturers' data for all disconnects and fuses.

1.2.1 Disconnects

PART 2 – PRODUCTS

2.1 Acceptable manufacturers shall be Square D, Cutler Hammer, Siemens or General Electric.

2.2 Equipment manufactured by any other manufacturers not specifically listed in Section 2.1 are not considered equal, or approved for use on this project.

2.3 All switches shall be heavy-duty type, externally operated, quick-make, quick-break, rated 600 volts or 240 volts as required, with the number of poles and ampacity as noted. All switches for motors shall be HP rated. Switches shall have NEMA-Type 1 enclosures, except switches located where exposed to outdoor conditions shall have NEMA Type 3R enclosure. Switches generally shall be fused except where noted to be non-fused on the drawings.

2.4 Where fuses are indicated, fuses shall be Bussman or Littlefuse (no known equal). Fuses shall be current limiting type with time delay characteristics to suit the equipment served.

PART 3 – EXECUTION

3.1 Mount all switches to structure or U-channel support. U-channel supports shall be cleaned and painted to prevent rust.

3.2 Switches shall be accessible with proper clearances in front per CEC 110-16.

3.3 All lugs shall be torque tested in the presence of the inspector of record.

REGISTERED PROFESSIONAL ENGINEER
ROBERT ROSESTEIN
No. E 14781
Exp. 6-30-2025
ELECTRICAL
STATE OF CALIFORNIA

#23001 5/8/2023

JOHNSON CONSULTING ENGINEERS, INC.
Power | Lighting | Multimedia
Communications | Data Networking
12875 Brookprinter Place, Suite 300
Poway, CA 92064
P 858.679.4030 | F 858.513.0559
www.jce-inc.com

Revision | Date

Consultant

Engineer

wstudiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd., Ste. 201, Encinitas, California 92024
Telephone (760) 753-4880 Fax (760) 452-7541

REGISTERED PROFESSIONAL ENGINEER
No. E 14781
Exp. 6-30-2025
ELECTRICAL
STATE OF CALIFORNIA

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

ELECTRICAL SPECIFICATIONS

Drawn: Author

Checked: Checker

Date:

Job:

E2.1

HOBART

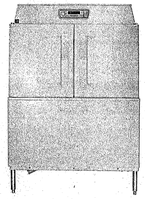
Project_____

AIA # _____ SIS #_____

Item #_____ Quantity _____ C.S.I. Section 114000

CLeN SERIES – CL44eN-BAS ELECTRIC

CL44eN-BAS ELECTRIC
High Temperature Rack Conveyor Dishwashing Machine



STANDARD FEATURES
- 202 racks per hour
- Opti-Rinse™ system
- Rapid return conveyor drive mechanism
- Large double door opening for ease of cleaning
- Doors are insulated & hinged with door interlock switches
- 19.5" chamber height opening (accepts sheet pans)
- Top mounted micro-processor control module
- Energy saver mode (programmable auto-shut down)
- Dirty water indicator
- Manager activated low temperature alert
- NSF rated configurable pot and pan dwell mode
- Configurable "intelligent" delime notification
- Service diagnostics
- Self-aligning wash manifolds
- Stainless steel anti-clogging wash arms
- Stainless steel self-draining pump and impeller
- Single, sloping scrap screen and deep scrap basket
- Stainless panels enclose perimeter and bottom
- Door actuated drain closure
- Convertible hot water or low temp final rinse
- Vent fan control
- Booster heater control
- ENERGY STAR® Certified

OPTIONS & ACCESSORIES (Available at extra cost)
- ❑ Standard, short and extended stainless steel vent hoods
- ❑ Internal stainless steel pressure-less 30 kW booster heater field convertible to 15 kW (booster includes PRV)
  - Dual point electrical connection standard on 208/60/3 and 240/60/3 voltage machines, when equipped with internal booster; single point kits available (see page 3)
  - Single point connection standard on 480/60/3 and 600/60/3 voltage machines, when equipped with internal booster
- ❑ Direct drive unloader – adds 38" length. Reference spec F39520 for more details
- ❑ Side loader – SL23 adds 23" length, SL30 adds 30" length. Reference specs F40926 and F40927 for more details
- ❑ Blower-dryer – adds 33½" to length. Reference spec F40252 for more details (ships separate from dishmachine, contact Hobart Service for installation)
- ❑ Drain water tempering kit (field installed)
- ❑ Flanged feet kit (requires two kits)
- ❑ Higher than standard chamber (24" opening)
- ❑ Table limit switch with 10' wire
- ❑ Correctional package (contact Hobart for details)
- ❑ Pressure regulator valve (PRV), for use with external booster
- ❑ Water shock absorber kit
- ❑ Factory-mounted circuit breakers (contact Hobart for details)
- ❑ Field installed single point kits available for 208/60/3 and 240/60/3 machines when equipped with internal booster

SPECIFIER STATEMENT
Specified dishwasher will be Hobart CL44eN Base electric tank heat model with Opti-Rinse™. Includes insulated ergonomic cabinet style doors, dirty water indicator, configurable "intelligent" de-lime notification, top mounted computer controls, and NSF approved pot and pan cycle mode. The wash tank utilizes durable precision pressure sensor monitors in lieu of conventional mechanical floats. The 19.5" standard chamber height will accommodate up to (6) standard sheet pans at a time on an open-end sheet pan rack.

Approved by_____ Date _____ Approved by_____ Date _____

HOBART

CL44eN-BAS ELECTRIC
High Temperature Rack Conveyor Dishwashing Machine

LEGEND

Electrical Connections	
Required when machine equipped with SINGLE POINT ELECTRICAL CONNECTION	
E1	Tank heat, motors, controls AND 30kW booster heater – multiple knockouts provided, 63-3/4" AFF.
Required when machine equipped with DUAL POINT ELECTRICAL CONNECTION	
E2	Tank heat, motors and controls – multiple knockouts provided, 63-3/4" AFF.
E3	Internal 30kW booster heater – multiple knockouts provided, 63-3/4" AFF.
Multiple knockouts provided for 2", 1" and 1/2" trade size conduits.	

Plumbing Connections	
P1	Drain. May be drained to either side of valve, plug opposite side 2" FPT. Recommend a floor drain minimum of 12" from machine for access and maintenance. 7'-3 ⅛" AFF.
P2	Hot water. 1/2" FPT connection. 1/2", 11-3/16" AFF. See plumbing notes for required temperatures.
P3	Optional cold water connection for drain water tempering 1/2" FPT, cold water temperature 80°F, maximum 7'-3 ⅛" AFF.

Vent Connections	
V1	Optional vent hoods, 4" x 16" vent stack with damper.

SPECIFICATIONS
Capacities
- Racks Per Hour (NSF rated) 202
- Wash Tank (U.S. gallons) 23
- Conveyor Speed (feet per minute) 5.6

Motor Horsepower
- Drive 1/6
- Wash 2

Water Consumption
- U.S. Gallons per Hour (maximum use at 20 PSI) 126
- U.S. Gallons per Rack 0.62
- Peak Drain Flow (U.S. gallons per minute) 38

Heating
- Tank Heat, Electric (kW) 15
- Optional Electric Booster (built-in) (kW for 40°F rise) 15
- Optional Electric Booster (built-in) (kW for 70°F rise) 30

Venting
- Load End (minimum CFM) 200
- Unload End (minimum CFM) 400

Shipping Weight (approximate) ..... 594 lbs.

Crated Dimensions ..... 53"L x 38"W x 78"H

E1	Single Point Electrical Connection with internal 30 kW Booster Heater		
Voltage	(E1) Tank Heat, Motors, Controls 30kW Booster Heater		Single Point Service Connection
	Rated Amps	Minimum Supply Circuit Ampacity / Maximum Protective Device	
208/60/3	138.9	175	Field Installed **SGLPT-KIT4-CLE** required, order separately
240/60/3	132.8	150	Field Installed **SGLPT-KIT2-CLE** required, order separately
480/60/3	68.0	90	Ships Standard, Factory Installed
600/60/3	47.1	60	Ships Standard, Factory Installed

E2 E3	Dual Point Electrical Connection with Internal 30 kW Booster Heater (For machines without internal booster heater, refer to E2, Tank Heat, Motors & Controls connection only)				
Voltage	(E2) Tank Heat, Motors, Controls		(E3) 30kW Booster Heater		Dual Point Service Connection
	Rated Amps	Minimum Supply Circuit Ampacity / Maximum Protective Device	Rated Amps	Minimum Supply Circuit Ampacity / Maximum Protective Device	
208/60/3	55.0	70	83.9	90	Dual Point Ships Standard
240/60/3	52.6	70	80.2	90	Dual Point Ships Standard
480/60/3	27.9	40	40.1	50	Field Convertible
600/60/3	20.3	25	26.9	40	Field Convertible

2 DISH WASHER CUT SHEET N.T.S.

HOBART

CL44eN-BAS ELECTRIC
High Temperature Rack Conveyor Dishwashing Machine

WARNING: Plumbing and electrical connections should be made by qualified personnel who will observe all the applicable plumbing, sanitary, safety codes and National Electrical Code.

Plumbing Notes: Minimum incoming water temperatures: 110°F for 30kW internal booster, 140°F for 15kW field converted internal booster, 180°F without internal booster. Building flowing water pressure to dish machine is 20 PSI, (+/- 5 PSI). For non-booster machines, a PRV with internal expansion bypass is required. When ordered as an accessory, ½" brass regulator must be installed before the booster. Water temperature to the regulator must not exceed 140°F.

Recommended water hardness to be 3 grains or less for best results.

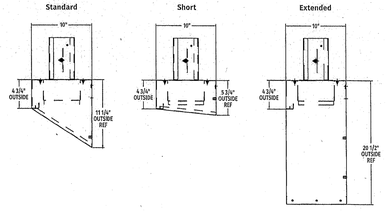
Electrical Note: Dishmachine not provided with internal GFCI protection.

CL44eN-BAS Electric Heat Dissipation		
Booster	BTU/HR.	
	Latent	Sensible
Without Booster	14,700	6,300
15kW Booster	28,300	12,100
30kW Booster	41,800	17,900

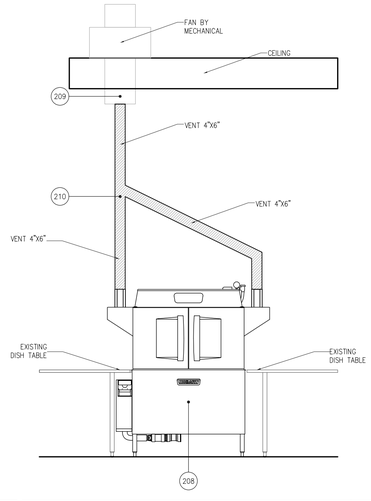
NOTE: 30kW Booster Heater field convertible to 15kW when 140°F incoming water provided. (Conversion instructions located in machine control box. Contact factory for 15kW booster amperage ratings.)

NOTE: Additional CLeN Voltages and Amperages are available, see document F40972.

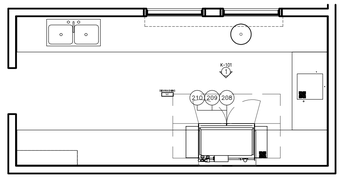
VENT HOOD OPTIONS (Adjustable, vent stack can be adjusted 1" to either side)



As continued product improvement is a policy of Hobart, specifications are subject to change without notice.



1 elevation 1/2" = 1'-0"



EQUIPMENT FLOOR PLAN plan 1/4" = 1'-0"

EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	AMPS	HP	VOLTS	PHASE	DIRECT	PLUG	NEMA	COLD WATER SIZE (IN)	HOT WATER SIZE (IN)	DIRECT DRAIN SIZE (IN)	INDIR DRAIN SIZE (IN)	EQUIPMENT REMARKS
208	1	DISHWASHER, CONVEYOR TYPE	HOBART	CL44EN-BAS+BUILDUP	68.0	2.0	480	3	X			1/2	1/2		2	DRAIN TO FLOOR SINK NOT CONNECTED TO GREASE INTERCEPTOR PER 2016 CPC
209	1	STEAM EXHAUST FAN	GREENHECK		VER		VER									SEE MECHANICAL PLANS FOR DETAILS
210	1	VENT DUCT	CUSTOM STAINLESS STEEL													FROM VENT COWLES AT DISH MACHINE TO EXHAUST FAN CONNECTION AT CEILING.

GENERAL NOTES:
A. EQUIPMENT, DENOTED IN ITEM 208 IS OWNER FURNISHED AND CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE ALL FITTINGS, ELECTRICAL, PLUMBING AND MECHANICAL ITEMS TO ENSURE THE DISHWASHER IS FULLY FUNCTIONAL. PROVIDE ANY ADDITONAL DUCTWORK TO ENSURE VENT-HOOD, PROVIDED BY OWNER, IS FULLY FUNCTIONING. ASSUME THE SHORT VENT HOOD WAS PURCHASED.
B. SEE MECHANICAL AND ELECTRICAL FOR NEW VENT HOOD EXHAUST FAN - ROOF MOUNTED.

Revision	Date

Consultant

Engineer

studiowc
ARCHITECTURE + ENGINEERING
515 Encinitas Blvd, Ste 201 Encinitas, California 92024
Telephone: (760) 634-8680 Fax: (760) 452-7341

CLARK ANTHONY WILLIAM C-28036 ARCHITECT

LA MESA ART ACADEMY
DISHWASHER APPLIANCE REPLACEMENT
LA MESA SPRING VALLEY S.D.

FOOD SERVICE EQUIPMENT
FLOOR PLAN

Drawn: Author
Checked: Checker
Date:
Job:

K101