FIRE ALARM UPGRADES

REQUEST FOR BIDS
24-25-07B

CONTRACT DOCUMENTS

March 14, 2025

National School District
1500 N Avenue
National City, CA 91950

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
REQUEST FOR BIDS
24-25-07B

SECTION 1
NOTICE TO CONTRACTORS
CALLING FOR BIDS

NOTICE TO CONTRACTORS CALLING FOR BIDS

NOTICE IS HEREBY GIVEN that the National 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 **9:00 AM** of the **9th day** of **April 2025**, sealed proposals for the award of a contract for **Fire Alarm Upgrades, Bid 24-25-07B. The upgrades are for two school sites.**

Bids shall be received in the Business Services Office of the National School District located at 1500 N Avenue, National City, CA and shall be opened and publicly read aloud at the above-stated time and place.

Prospective bidders are required to be pre-qualified for projects in excess of one million dollars ($1,000,000) in estimated value using any funds received pursuant to the Leroy F. Greene School Facilities Act of 1998 or any funds from any state school bond. Additionally, subcontractors in the trades of mechanical, electrical and plumbing are required to be prequalified. Prequalification Applications can be found on the District website https://www.nsd.us/Page/188. **This Project is not subject to prequalification.**

In contracts involving 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 (Civil Code Section 9550) approved by the District in the form set forth in the contract documents.

Each bid shall be accompanied by a bid bond, the non-collusion affidavit, the list of proposed subcontractors, and all additional documentation required in the 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.

The lowest bid shall be the lowest total of the base bid prices as set forth in the bid form.

Pursuant to Labor Code Section 1725.5, contractors and all subcontractors must be registered with the Department of Industrial Relations in order to bid on or to be listed in a bid proposal or to engage in the performance of any defined public work contract. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

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 on file and will be made available to any interested party upon request. 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, as this is a public works contract.

Each bidder shall be a licensed contractor at the time the bid is submitted and throughout the duration of the project pursuant to the Business and Professions Code and shall be licensed in the following classification**:**

B-General Building Contractor

A **mandatory** project Conference and site walk will be held on **Monday, March 24, 2025 at 11:00 AM at Las Palmas School, 1900 East 18th Street, National City, CA 91950** for the purpose of acquainting all prospective Contractors with the Bid documents and the work site. All prospective Contractors for this project are required to attend this meeting.

No bidder may withdraw his or her or its bid for a period of sixty (60) days after the date set for the opening of bids.

Dated this **14th day of March, 2025**

Leighangela Brady, Ed.D.
Secretary to the Governing Board
National School District,
of San Diego County, California

FIRE ALARM UPGRADES
BID 24-25-07B

TABLE OF CONTENTS

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 2
INFORMATION FOR BIDDERS

INFORMATION FOR BIDDERS

1. Preparation of Bid Form

The District invites bids on the attached form to be submitted by qualified contractors to the District at such time and place as is stated in the Notice to Contractors Calling for Bids, not later than **9:00 AM** of the **9th day of April, 2025**. Bids shall only be prepared using copies of the Bid Forms that are included in the Contract Documents. The use of substitute bid forms other than clear and correct photocopies of those provided by the District will not be permitted. Bids shall be received in the Office of Assistant Superintendent, Business Service located at 1500 N Avenue, National City, CA. 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.

2. Bid Security

Each bid shall be accompanied by either: (a) a certified check made payable to the District; (b) a cashier's check made payable to the District; or (c) a bid bond payable to the District executed by the Bidder as principal and surety as obligor in an amount not less than 10% of the maximum amount of the bid. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. The check or bid bond shall be given as a guarantee that the Bidder shall execute the Contract if it be awarded to the Bidder, shall provide the payment and performance bonds and insurance certificates and endorsements as required herein within ten (10) calendar days after notification of the award of the Contract to the Bidder. Failure to provide the required documents may result in forfeiture of the Bidder's bid deposit or bond to the District and the District may award the Contract to the next lowest responsible Bidder, or may call for new bids.

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. Signing of Bids

All Bids submitted shall be executed by the Bidder or its authorized representative. Bidders may be asked to provide evidence in the form of an authenticated resolution of its Board of Directors or a Power of Attorney evidencing the capacity of the person signing the Bid to bind the Bidder to each Bid and to any Contract arising therefrom.

If a Bidder is a joint venture or partnership, it may be asked to submit an authenticated Power of Attorney executed by each joint venturer or partner appointing and designating one of the joint venturers or partners as a management sponsor to execute the Bid on behalf of Bidder. Only that joint venturer or partner shall execute the Bid. The Power of Attorney shall also: (1) authorize that particular joint venturer or partner to act for and bind Bidder in all matters relating to the Bid; and (2) provide that each venturer or partner shall be jointly and severally liable for any and all of the duties and obligations of Bidder assumed under the Bid and under any Contract arising therefrom. The Bid shall be executed by the designated joint venturer or partner on behalf of the joint venture or partnership in its legal name.

5. Modifications

Each Bidder shall submit its Bid in strict conformity with the requirements of the Contract Documents. Unauthorized additions, modifications, revisions, conditions, limitations, exclusions or provisions attached to a Bid may render it non-responsive and may cause its rejection. Bidders shall neither delete, modify, nor supplement the printed matter on the Bid Forms, nor make substitutions thereon. Oral, telephonic and electronic modifications will not be considered, unless the Notice Inviting Bids authorizes the submission of electronic bids and modifications thereto and such modifications are made in accordance with the Notice Inviting 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. Bid documents obtained under deposit shall be returned within 10 days after bid opening.

7. Examination of Site and Contract Documents

During the Mandatory Job Walk, each bidder should fully acquaint themselves 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 its bid or to the contract. The Bidder is responsible to obtain any geotechnical and/or soils report pertaining to the site of the work at Bidder's expense. 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.

Discrepancies in, and/or omissions from the Plans, Specifications or other Contract Documents or questions as to their meaning shall be immediately brought to the attention of the District by submission of a written request for an interpretation or correction to the District no later than **12:00 PM on Friday, March 28, 2025**. Such submission, if any, must be sent to the Director of Business Support Services by emailing to jhansen@nsd.us.

Any interpretation of the Contract Documents will be made only by written addenda duly issued and mailed or delivered to each person or firm who has requested notice. The District will not be responsible for any explanations or interpretations provided in any other manner. No person is authorized to make any oral interpretation of any provision in the Contract Documents to any Bidder, and no Bidder should rely on any such oral interpretation.

Bids shall include complete compensation for all items that are noted in the Contract Documents as the responsibility of the Contractor.

7.1 Each Bidder, by making his/her 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/her bid, represents that it has performed all diligence necessary to make an accurate bid, including, but not limited to, visiting the site, inspecting the area of the work, and familiarizing itself with the local conditions under which the work is to be performed, including sub-surface 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.

8. Withdrawal of Bids

Prior to bid opening, a Bid may be withdrawn by the Bidder only by means of a written request signed by the Bidder or its properly authorized representative.

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 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.

Unless otherwise specified in Special Conditions, Contractor shall furnish a surety bond in an amount equal to 100 percent of contract price as security for faithful performance of this contract and shall furnish a separate bond as security for payment of persons performing labor and furnishing materials in connection with this contract. The Payment Bond must be in the amount of 100 percent of the total amount payable. Both the Payment and the Performance Bonds 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. Aforesaid bonds shall be in form set forth in these contract documents. Upon request of the successful Bidder, as Contractor, the District will consider and accept multiple sureties on such bonds.

10. 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 subproposal to a Bidder, or that has

quoted prices of materials to a Bidder, is not thereby disqualified from submitting a subproposal 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 nonresponsive.

11. Award of Contract

Once all Bids are opened and reviewed to determine the lowest responsive and responsible Bidder, the District Governing Board may award the contract. The apparent successful Bidder should provide the following documents: (1) the Performance Bond; (2) the Payment Bond; and (3) the required insurance certificates and endorsements. Once the District notifies the Bidder of the intent to award, the Bidder will have ten (10) calendar days from the date of this notification to supply the District with all requested documents and certifications. Regardless of whether the Bidder supplies the required documents and certifications in a timely manner, the Contract time will begin to run fifteen (15) calendar days from the date of the notice of award. Once the District receives all of the properly drafted and executed documents and certifications from the Bidder, the District may issue a Notice to Proceed to that Bidder.

The District may reject any Bid which, in its opinion when compared to other bids received or to the District's internal estimates, does not accurately reflect the cost to perform the Work. The District may reject as non-responsive any bid which unevenly weights or allocates costs, including but not limited to overhead and profit to one or more particular bid items.

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.

12. 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 (below) shall be used to determine the lowest bid:

___X___ (a) The lowest for each project shall be the lowest bid price on the base contract for each project 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.

_____ (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.

13. 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, its construction experience in the type of work being required by the District, and its 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.

14. Listing Subcontractors

Each Bidder shall submit with his/her or its 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. In addition to these requirements, at the bid opening, Contractor shall provide the address, phone number, **DIR registration number**, and **license number** of each listed subcontractor. If the Bidder fails to provide information within one business day of bid opening, District may in its discretion, reject the bid as nonresponsive.

15. Workers' Compensation

In accordance with the provisions of section 3700 of the Labor Code, Contractor shall secure the payment of compensation to its employees. Contractor shall sign and file with 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.

16. Substitution of Security / Retention

The Contract Documents call for monthly progress payments based upon the percentage of the work completed. The District will retain five percent (5%) of each progress payment as provided by the Contract Documents. At the request and expense of the successful Bidder, the District will substitute securities for the amount so retained in accordance with Public Contract Code Section 22300.

17. Contractor's License and Certifications

Pursuant to Section 7028.15 of the Business and Professions Code and Section 3300 of the Public Contract Code, all Bidders must possess proper licenses for performance of this Contract prior to submittal of bid documents. Subcontractors must possess the appropriate licenses for each specialty subcontracted prior to submittal of bid documents. Pursuant to Section 7028.5 of the Business and Professions Code, the District shall consider any bid submitted by a contractor not currently licensed in accordance with state law and pursuant to the requirements found in the Contract Documents to be non-responsive, and the District shall reject the Bid. The District shall have the right to request, and Bidders shall provide within five (5) calendar days, evidence satisfactory to the District of all valid license(s) currently held by that Bidder and each of the Bidder's subcontractors, before awarding the Contract.

Bidder must have all Certifications and/or Factory Authorizations required for the project prior to submittal of bid; including but not limited to specified manufacturer certifications located in the Special Conditions section of this document. Subcontractors must have all Certifications and/or Factory Authorizations required for each specialty subcontracted prior to submittal of bid; including but not limited to specified manufacturer certifications located in the Special Conditions section of this document.

18. 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 responsible for procuring, implementing and complying with the provisions of the Permit and the Storm Water Pollution Prevention Plan (SWPPP), including the standard provisions, monitoring and reporting requirements as required by Permit and as required by Article 70 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/or preparing, complying with (e.g., monitoring), or revising the SWPPP.

19. 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.

20. Substitutions and Special Brand Names

In accordance with Public Contract Code section 3400, except where the District has established a standard which has been approved by the governing board, requests for review and evaluation of "or equal" items will be considered. Any proposals for substitutions of equipment, materials, or products other than what is specified in the bid documents must be submitted, in writing, to the District within seven (7) calendar days after the release date of the bid documents. After reviewing the request, the District will respond with its decision to all parties who have requested notice. The District has the right to reject any or all requests for substitutions of equipment, materials, or products other than what is specified in the bid documents. The documentation submitted must include any and all illustrations, specifications, and other relevant data including catalogue 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 Bidder 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 "OR EQUAL" ITEM.

21. 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.

22. Registration with Department of Industrial Relations

Pursuant to Labor Code Section 1725.5, contractors and all subcontractors must be registered with the Department of Industrial Relations (DIR) in order to bid on, to be listed in a bid proposal for a public works project or to engage in the performance a public works contract. A complete list of DIR registration numbers of all second and third tier subcontractors included on the project will be due at bid opening. Failure to provide the complete list may result in a determination of non-responsiveness. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Contractor and any subcontractors engaging in work on the Project are required to review and comply with the provisions of the California Labor Code, Division 2, Part 7, Chapter 1, beginning with Section 1720, and the regulations of the Department of Industrial Relations implementing those provisions. These statutory and regulatory provisions contain specific requirements concerning, for example, the determination and payment of prevailing wages, retention, inspection and auditing of payroll records, use of apprentices, payment of overtime compensation, and various penalties or fines which may be imposed for violations of the requirements of the chapter. Submission of a bid proposal constitutes the bidder's representation that it has thoroughly reviewed these statutory and regulatory requirements and agrees to bind every subcontractor performing work on the Project to these requirements to the extent such requirements are applicable to the subcontractor's work.

23. Disabled Veteran Business Enterprises

Disabled Veteran Business Enterprise (DVBE) incentive is waived for this project.

24. Immigration Reform and Control Act

The Bidder hereby certifies that he or she or it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Immigration Reform and Control Act of 1986 ("IRCA") in the hiring of its employees and the Bidder shall indemnify, hold harmless and defend the District against any and all actions, proceedings, penalties or claims arising out of the Bidder's failure to comply strictly with the IRCA.

25. Filing of Bid Protests

Bidders may file a "protest" of a Bid with the District's Director of Business Support Services. In order for a Bidder's protest to be considered for review, the protest must;

a. Be filed in writing within five (5) calendar days of the notice of intent to award:
b. Clearly identify the specific irregularity or accusation;
c. Clearly identify the specific District staff determination or recommendation being protested;
d. Specify, in detail, the grounds of the protest and the facts supporting the protest; and

e. Include all relevant, supporting documentation with the protest at time of filing.

If the protest does not comply with each of these requirements, it will be rejected as invalid.

If the protest is properly submitted, the District's Director of Business Support Services, or other designated District staff member shall review the basis of the protest and all relevant information. The Director of Business Support Services will provide a written decision to the protestor. The protestor may then appeal the decision of the Director of Business Support Services to the Assistant Superintendent of Business Services.

26. Addenda

The District reserves the right to revise the Contract Documents prior to the bid opening date. Revisions, if any, shall be made by written Addendum. All addenda issued by the District shall be included in the bid and made part of the Contract Documents. Pursuant to Public Contract Code Section 4104.5, if the District issues an Addendum which includes material changes to the Project less than 72 hours prior to the deadline for submission of bids, the District will extend the deadline for submission of bids. The District may determine, in its sole discretion, whether an Addendum warrants postponement of the bid submission date. Each prospective Bidder shall provide District a name, address and email to which Addenda may be sent, as well as a telephone number by which the District can contact the Bidder. Copies of Addenda will be furnished by email, first class mail, express mail or other proper means of delivery without charge to all parties who have obtained a copy of the Contract Documents and provided such current information. Please Note: Bidders are responsible for ensuring that they have received any and all Addenda. To this end, each Bidder should contact the Purchasing Department to verify that it has received all Addenda issued, if any, prior to the bid opening.

27. Submission of Sealed Bids

Once the Bid and supporting documents have been completed and signed as set forth herein, they shall be placed, along with the Bid Guarantee and other required materials in an envelope, sealed, addressed and delivered or mailed, postage prepaid to the District at the place and to the attention of the person indicated in the Notice Inviting Bids. No oral or telephonic bids will be considered. No forms transmitted via the internet, e-mail, facsimile, or any other electronic means will be considered unless specifically authorized by District as provided herein. The envelope shall also contain the following in the lower left-hand corner thereof:

(Contractor's Name)
Bid 24-25-07B
Fire Alarm Upgrades

Only where expressly permitted in the Notice Inviting Bids, may Bidders submit their bids via electronic transmission pursuant to Public Contract Code Sections 1600 and 1601. District reserves the right to not accept electronically transmitted bids if not specifically authorized in the Notice Inviting Bids, and may reject any bid not strictly complying with District's designated methods for delivery.

28. Delivery and Opening of Bids

Bids will be received by the District at the address shown in the Notice Inviting Bids up to the date and time shown therein. The District will leave unopened any Bid received after the specified date and time, and any such unopened Bid will be returned to the Bidder. It is the Bidder's sole responsibility to ensure that its Bid is received as specified. Bids may be submitted earlier than the dates(s) and time(s) indicated.

Bids will be opened at the date and time stated in the Notice Inviting Bids, and the amount of each Bid will be read aloud and recorded. All Bidders may, if they desire, attend the opening of Bids. The District may in its sole discretion, elect to postpone the opening of the submitted Bids. District reserves the right to reject any or all Bids and to waive any informality or irregularity in any Bid. In the event of a discrepancy between the written amount of the Bid Price and the numerical amount of the Bid Price, the written amount shall govern.

29. Insurance Requirements

The successful Bidder shall procure the insurance in the form and in the amount specified in the General Conditions.

30. Prevailing Wage

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 may be obtained online at http://www.dir.ca.gov/dlsr. Bidders are advised that a copy of these rates must be posted by the successful Bidder at the job site(s).

31. Debarment of Contractors and Subcontractors

In accordance with the provisions of the Labor Code, contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Section 1777.1 or Section 1777.7 of the Labor Code. Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid to a debarred subcontractor by the Contractor for the Project shall be returned to the District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the Project.

Contractors who will perform more than $100,000 in business with the District during the fiscal year must complete the Suspension and Debarment Certification, Certification Regarding Lobbying Form (and, if applicable, Disclosure of Lobbying Activities) forms. The forms are available upon request from the Purchasing Office at 619-336-7784. The District is prohibited from contracting with Contractors that are on the U.S. General Services Administration's Suspension and Debarment List. The Suspension and Debarment Certification is required to document that the Contractor or any of its key employees have not been debarred, proposed for debarment, or suspended by a Federal agency.

32. Sales and Other Applicable Taxes, Permits, and Fees

Contractor and its subcontractors performing work under this Contract will be required to pay California sales tax and other applicable taxes, and to pay for permits, licenses and fees required by the agencies with authority in the jurisdiction in which the work will be located, unless otherwise expressly provided by the General or Special Conditions.

33. Iran Contracting Act of 2010

The Bidder hereby certifies that he/she or it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Iran Contracting Act of 2010. The Bidder shall indemnify, hold harmless and defend the District against any and all actions, proceedings, penalties or claims arising out of the Bidder's failure to comply strictly with the Iran Contracting Act of 2010.

34. Prequalification

Prospective bidders are required to be pre-qualified for projects in excess of one million dollars ($1,000,000) in estimated value using any funds received pursuant to the Leroy F. Greene School Facilities Act of 1998 or any funds from any state school bond. Additionally, subcontractors in the trades of mechanical, electrical and plumbing are required to be prequalified. These trades are associated with California State Contractor's License classifications including, but not limited to: C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, and C-46. The prequalification process may be conducted on a per project basis and/or on scheduled basis, as determined by the needs of the District. Prequalification status is valid for one (1) calendar year. **This Project is not subject to prequalification.**

End of Information for Bidders

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 3
CONTRACT BID FORMS

TO: National School District, acting by and through its Governing Board, herein called the "District":

Pursuant to and in compliance with your Request for Bids and the other documents relating thereto, the undersigned Contractor, having thoroughly examined and familiarized 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 Fire Alarm Upgrades Bid 24-25-07B all in strict conformity with the drawings and specifications and other contract documents, including addenda nos._____,_____,_____, and_____, on file at the office of Assistant Superintendent, Business Services of District for the sum of:

Total Base Bid Amount: $ (_____)

_____Dollars_____Cents

BID AWARDS: Award for Project will be determined on the lowest base bid on page 1.

BID PRICE GUARANTEED: Prices quoted herein are to remain firm from **April 9, 2025 to June 30, 2025**.

1. The District has no obligation to award any contracts listed on this Bid Form.

2. 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.

3. Document checklist:
   _____The required **bid security** is attached hereto.
   _____**Non-collusion** affidavit is attached hereto.
   _____The required list of proposed **subcontractors** is attached hereto.
   _____**Bidder Information Forms** are attached hereto.

4. It is understood and agreed that Bidder shall provide the addresses, telephone numbers, and license numbers of all listed subcontractors at bid opening or Bidder's bid may be rejected as nonresponsive.

5. 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 seven (6) days after receipt of notification of intent to 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 Proceed, and shall be completed by the Contractor in the time specified in the contract documents.

6. The names of all persons interested in the foregoing 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.)

7. Bidder certifies that it is licensed in accordance with the law providing for the registration of Contractors, **License No._____, Expiration Date_____, class of license** . Copy of Bidders wallet license is **attached hereto.**

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_____, 20__ at_____County, California.

Proper Name of Bidder _____

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: _____

Telephone: ( ) _____

BID BOND

THAT_____,
as Principal, and_____, as Surety, are held firmly bound unto the **NATIONAL SCHOOL DISTRICT** (hereinafter called the DISTRICT) in the sum of _____

_____DOLLARS ($_____), being not less than ten percent (10%) of the Total Bid Price; for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a bid to the DISTRICT to perform all Work required for the construction of the **Fire Alarm Upgrades, Bid 24-25-07B** as set forth in the Notice Inviting Bids and accompanying Bid Documents, dated **March 14, 2025.**

NOW, THEREFORE, if said Principal is awarded a Contract for the Work by the DISTRICT and, within the time and in the manner required by the above- referenced Bid Documents, enters into the written form of Contract bound with said Bid Documents, furnishes the required bonds (one to guarantee faithful performance and the other to guarantee payment for labor and materials) furnishes the required insurance certificates and endorsements, and furnishes any other certifications as may be required by the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, said Surety shall pay all costs incurred by the DISTRICT in such suit, including reasonable attorneys' fees to be fixed by the court.

SIGNED AND SEALED, this_____day of_____, 20_.

_____	_____
Principal	Surety
By: _____	By: _____
Signature	Signature
(SEAL)	(SEAL)

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the "Subletting and Subcontracting Fair Practices Act," Sections 4100 through 4114 of the California Public Contract Code, and any amendments thereto, each Bidder shall provide the information requested below for each subcontractor who will perform work, labor or render service to Bidder in or about the construction of the Work in an amount in excess of one-half of one percent (greater than 0.5 %) of the Bidder's Total Bid Price, or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the Contractor's total bid or ten thousand dollars ($10,000), whichever is greater, and shall further set forth the portion of the Work which will be done by each subcontractor. Bidder shall list only one subcontractor for any one portion of the Work.

The Department of Industrial Relations **(DIR) registration number** for each subcontractor will be due no later than **24 hours of bid opening**. Failure to supply DIR registration numbers of all subcontractors may result in a determination of non-responsiveness for the bid proposal.

If the Bidder fails to specify a subcontractor for any portion of the Work to be performed under the Contract, it shall be deemed to have agreed to perform such portion itself, and shall not be permitted to subcontract that portion of the Work except under the conditions hereinafter set forth below.

Subletting or subcontracting of any portion of the Work in excess of one half of one percent (greater than 0.5%) of the Total Bid Price or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the Contractor's total bid or ten thousand dollars ($10,000), whichever is greater, for which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after District approval.

(Duplicate page if needed for listing additional subcontractors)

Name and Location of Subcontractor	Description of Work to be Subcontracted
Name: _____	_____
Address: _____	_____
Ph: _____ Fax: _____	License No. _____
	DIR # _____

Name and Location of Subcontractor	Description of Work to be Subcontracted
Name: _____	_____
Address: _____	_____
Ph: _____ Fax: _____	License No. _____
	DIR # _____

NON-COLLUSION AFFIDAVIT

In accordance with Public Contract Code Section 7106, the undersigned, being first duly sworn, deposes and says that he or she holds the position listed below with the Bidder, the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other Bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the Bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

_____
Signature

_____
Typed or Printed Name

_____
Title

_____
Bidder

Subscribed and sworn before me
This____day of_____, 20____

_____
Notary Public in and for
the State of California

(Seal)

My Commission Expires: _____

SECTION 3 – C
BIDDER INFORMATION FORMS

IMPORTANT NOTE: This bid may be subject to prequalification. All Bidders, regardless of prequalification status, must complete the following Bidder Information Forms and submit them with their bid.

INFORMATION ABOUT BIDDER

[Indicate not applicable ("N/A") where appropriate.]

NOTE: Where Bidder is a joint venture, pages shall be duplicated and information provided for all parties to the joint venture.

1.0 Name of Bidder: _____

2.0 Type, if Entity:

_____

3.0 Bidder Address: _____

_____

_____

_____ _____

Facsimile Number Telephone Number

4.0 How many years has Bidder's organization been in business as a Contractor?

_____

5.0 How many years has Bidder's organization been in business under its present name?

_____

5.1 Under what other or former names has Bidder's organization operated?

_____

6.0 If Bidder's organization is a corporation, answer the following:

6.1 Date of Incorporation: _____

6.2 State of Incorporation: _____

6.3 President's Name: _____

6.4 Vice-President's Name(s): _____

6.5 Secretary's Name: _____

6.6 Treasurer's Name: _____

7.0 If an individual or a partnership, answer the following:

7.1 Date of Organization: _____

7.2 Name and address of all partners (state whether general or limited partnership):

8.0 If other than a corporation or partnership, describe organization and name principals:

9.0 List other states in which Bidder's organization is legally qualified to do business.

10.0 What type of work does the Bidder normally perform with its own forces?

11.0 Has Bidder ever failed to complete any work awarded to it? If so, note when, where, and why:

12.0 Within the last five years, has any officer or partner of Bidder's organization ever been an officer or partner of another organization when it failed to complete a contract? If so, attach a separate sheet of explanation:

13.0 On a separate sheet, list the construction experience of the key individuals of Bidder's organization.

(see attached)

14.0 List Trade References:

15.0 List Bank References (Bank, Branch Address, Account Number):

16.0 Name of Bonding Company and Name and Address of Agent:

_____

_____

_____

LIST OF CURRENT PROJECTS (Backlog)
[Attach page for additional current projects.]

Project	Description of Bidder's Work	Completion Date	Estimated Magnitude ($. m/hrs. etc.)

LIST OF FIVE COMPLETED PROJECTS - LAST FOUR YEARS
[Attach page if needed for listing of additional completed projects.]

Please list any school project first which are similar enough to demonstrate Bidder's ability to perform the required Work followed by all other projects in chronological order.

Project Client	Performance	Magnitude ($.m/hrs.etc.)	Contract Contact Information Name & Phone Number

EXPERIENCE AND TECHNICAL QUALIFICATIONS QUESTIONNAIRE

Personnel:
The Bidder shall identify the key personnel to be assigned to this project in a management, construction supervision or engineering capacity.

1. List each person’s job title, name and percent of time to be allocated to this project:

_____

_____

2. Summarize each person's specialized education:

_____

_____

3. List each person"s years of construction experience relevant to the project:

_____

_____

4. Summarize such experience:

_____

_____

Bidder agrees that personnel named in this Bid will remain on this Project until completion of all relevant Work, unless substituted by personnel of equivalent experience and qualifications approved in advance by the District.

Additional Bidder's Statements:

If the Bidder feels that there is additional information, which has not been included in the questionnaire above, and which would contribute to the qualification review, it may add that information in a statement here or on an attached sheet, appropriately marked:

_____

_____

_____

VERIFICATION AND EXECUTION

These Contract Bid Forms shall be executed only by a duly authorized official of the Bidder:

I declare under penalty of perjury under the laws of the State of California that the foregoing information is true and correct:

Executed on this_____day of_____, 20_____.

By: _____
Type or Print Name

_____
Signature

_____
Title

Subscribed and sworn before me this___day of_____, 20____.

_____
Notary Public in and for
the State of California

(Seal)

My Commission Expires: _____

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 4
AGREEMENT

CONTRACT AGREEMENT

THIS AGREEMENT, made this ___ day of_____in the County of_____, State of California, by and between the **National 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:

Fire Alarm Upgrades
Bid 24-25-07B

in strict compliance with the contract documents as specified in Article 4 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 Twenty Three (23) days from and after the date stated in such notice, which shall include three (3) 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 - CONTRACT PRICE. The District shall pay to the Contractor as full consideration for the faithful performance of the contract, subject to any additions or deductions as provided in the contract documents, and including any applicable sales, use or other taxes or costs, the sum of: _____ _____($_____), the following amounts stipulated in the bid.

ARTICLE 4 - COMPONENT PARTS OF THE CONTRACT. The contract entered into by this Agreement consists of the following contract documents (referred to herein as the contract of 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
Designation of Subcontractors
List of Subcontractor's DIR Registration Numbers
Noncollusion Affidavit
Agreement
Bid Bond
Performance Bond
Payment Bond for Public Works
Recycled Content Certification
Contractor Fingerprinting Requirements
Asbestos-Free Materials Certification
Drug-Free Workplace Certification
Contractor's Certificate Regarding Workers' Compensation
General Conditions and Special Conditions
Project Manual and Specifications
Drawings
Certification of Contractor and Subcontractor Division of Industrial Relations Registration
Addenda Nos._____,_____,_____, as issued

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.

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

CONTRACTOR:

License No. _____ DIR #_____

By _____

Its _____

(Corporate Seal)

DISTRICT:
National School District

By _____

Its _____

Governing Board Date _____

WORKERS' COMPENSATION

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.)

00151-00005/3762855.1

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES

BID 24-25-07B

SECTION 5
PERFORMANCE BOND

PERFORMANCE BOND

WHEREAS the **NATIONAL SCHOOL DISTRICT** (also herein "Obligee") has awarded to _____ (hereinafter "Contractor"), a contract for work consisting of but not limited to, furnishing all labor, materials, tools, equipment, services, and incidentals for the construction of the **Fire Alarm Upgrades, Bid 24-25-07B,** Project and all other required structures and facilities within the rights-of-way, easements and permits;

WHEREAS, the Work to be performed by the Contractor is more particularly set forth in that certain contract for the said Public Work dated_____(hereinafter the "Public Work Contract"); and

WHEREAS, the Contractor is required by said Public Work Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof,

NOW, THEREFORE, we _____, the undersigned Contractor, as Principal, and _____, a corporation organized and existing under the laws of the State of_____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the **NATIONAL SCHOOL DISTRICT** in the sum of _____ dollars, $_____, said sum being not less than 100% of the total amount payable by the said Obligee under the terms of the said Public Work Contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the 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 Public Work 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 intent and meaning; and shall faithfully fulfill the one-year guarantee of all materials and workmanship; and indemnify and save harmless the Obligee, its officers and agents, as stipulated in the said Public Work Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect. In the event legal action is required to enforce the provisions of this agreement, the prevailing party shall be entitled to recover reasonable attorneys' fees in addition to court costs, necessary disbursements, and other damages.

In case legal action is required to enforce the provisions of this bond, the prevailing party shall be entitled to recover reasonable attorneys' fees in addition to court costs, necessary disbursements and other consequential damages.

The said Surety, for value received, hereby stipulates and agrees that no change, extensions of time, alteration or addition to the terms of the Public Work Contract or to the Work to be performed thereunder, or the specifications accompanying the same shall in any way affect its obligations on this bond, and it 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 Specifications.

IN WITNESS WHEREOF, we have hereto set our hands and seals this___ day of_____, 20_.

_____
Principal/Contractor

By:_____
President

_____
Surety

By:_____
Attorney-in-Fact

The rate of premium on this bond is_____per thousand.

The total amount of premium charged, $_____.

(The above must be filled in by corporate surety.)

STATE OF CALIFORNIA)
) ss.
COUNTY OF_____)

On this ____ day of _____, in the year _____, before me, _____, a Notary Public in and for said state, personally appeared _____, known to me (or proved to be on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument as the Attorney-in-Fact of the _____ (surety) and acknowledged to me that he subscribed the name of the _____ (surety) thereto and his own name as Attorney-in-Fact.

_____
Notary Public in and for said State

(SEAL)

My Commission expires_____.

This space intentionally left blank.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____ Secretary of the corporation named as principal to the within bond; that _____ who signed the said bond on behalf of the principal was then _____ of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing Board.

(Corporate Seal)

_____
Signature

_____
Date

NOTE: A copy of the power of attorney to local representatives of the bonding company may be attached hereto.

This space intentionally left blank.

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES

BID 24-25-07B

SECTION 6
PAYMENT BOND

PAYMENT BOND

WHEREAS, the National 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: **Fire Alarm Upgrades, Bid 24-25-07B** (the "Project"); and

WHEREAS, said Principal is required by California Civil Code Section 9550 et seq. 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 hers or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay (1) any of the persons named in California Civil Code Section 9100, (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 inure to the benefit of any of the persons named in California Civil Code Section 9100 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 California Civil Code Section 9100 , 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

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 7
GENERAL CONDITIONS

GENERAL CONDITIONS

CONTENTS

Article No. **Page No.**

GENERAL CONDITIONS

Article 1 DEFINITIONS

a. The "District" and "Contractor" are those mentioned as such in the agreement. For convenience and brevity, these terms, as well as terms identifying other persons involved in the contract are treated throughout the contract documents as if they are of singular number and masculine gender.

b. "Subcontractor," as used herein, includes those having a direct contract with Contractor and one who furnishes material worked to a special design according to plans and specifications of this work, but does not include one who merely furnishes material not soworked.

c. "Surety" is the person, firm, or corporation, admitted as a California admitted surety, that executes as surety the Contractor's Performance Bond and Payment Bond for Public Works.

d. "Provide" shall include "provide complete in place," that is, "furnish and install."

e. Words such as "indicated," "shown," "detailed," "noted," "scheduled," or words of similar meaning shall mean that reference is made to the drawings, unless otherwise noted. It shall be understood that the direction, designation, selection, or similar import of the District is intended, unless stated otherwise.

f. "Work" of the Contractor or subcontractor includes labor or materials or both.

g. The term "day" as used herein shall mean calendar day unless otherwise specifically designated.

h. Where the words "equal," "equivalent," "satisfactory," "directed," "designated," "selected," "as required," and words of similar meaning are used, the written approval, selection, satisfaction, direction, or similar action of the District is required.

i. Where the word "required" and words of similar meaning are used, it shall mean, "as required to properly complete the work as required by the District," unless stated otherwise.

j. The word "perform" shall be understood to mean that the Contractor, at Contractor's expense, shall perform all operations necessary to complete the work, including furnishing of necessary labor, tools, and equipment, and further including the furnishing and installing of materials that are indicated, specified, or required to complete such performance.

k. Where the words "acceptable," "acceptance," or words of similar import are used, it shall be understood that the acceptance of the District is intended.

l. Where shown, the words "includes," and "including," do not limit the work to the items following those words.

Article 2 DRAWINGS AND SPECIFICATIONS

a. **Contract Documents.** Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intention of documents is to include all labor and materials, equipment, and transportation necessary for the proper execution of the work. Materials or work described in words which as applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

b. **Interpretations.** Drawings and specifications are intended to be fully cooperative and to agree. However, if Contractor observes that drawings and specifications are in conflict, he shall promptly notify the District in writing and any necessary changes shall be adjusted as provided in contract for changes in work. If such conflict arises, the following order of precedence shall generally apply, provided, however, that the order of precedence shall not be so rigidly interpreted as to affect an absurd or costly result:

1. Special Conditions shall take precedence over General Conditions.

2. Technical Specifications implement, in additional detail, the requirements of the General Conditions. In the event of conflict between the Technical Specifications and the General Conditions, the General Conditions shall take precedence.

3. In the event of a conflict between the Technical Specifications and the drawings, the higher quality, higher quantity and most stringent requirements shall be deemed to apply and shall govern as to materials, workmanship, and installation procedures.

4. With regard to drawings:

(a) Figures govern over scaled dimensions;
(b) Larger details govern over general drawings;
(c) Addenda/change order drawings govern over contract drawings;
(d) Contract drawings govern over standard drawings.

5. Work not particularly shown or specified shall be the same as similar parts that are shown or specified.

c. Misunderstanding of drawings and specifications shall be clarified by the District, whose decisions shall be final.

d. Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified.

Article 3 COPIES FURNISHED

Contractor will be furnished, free of charge, copies of drawings and specifications as set forth in Special Conditions. Additional copies may be obtained at cost of reproduction.

Article 4 OWNERSHIP OF DRAWINGS

All drawings, specifications, and copies thereof furnished by District are its property. They are not to be used on other work and with exception of signed contract sets, are to be returned to District on request at completion of work.

Article 5 DETAIL DRAWINGS AND INSTRUCTIONS

a. **Examination of Contract Documents.** Before commencing any portion of The Work, Contractor shall again carefully examine all applicable Contract Documents, the Project site and other information given to Contractor as to materials and methods of construction and other Project requirements. Contractor shall immediately notify the District Representative of any potential error, inconsistency, ambiguity, conflict or lack of detail or explanation. If Contractor performs, permits, or causes the performance of any Work which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all resulting costs, including, without limitation, the cost of correction. In no case shall the Contractor or any subcontractor proceed with Work if uncertain as to the applicable requirements.

b. **Additional Instructions.** After notification of any error, inconsistency, ambiguity, conflict or lack of detail or explanation, the District Representative will provide any required additional instructions, by means of drawings or other written direction, necessary for proper execution of Work.

c. **Quality of Parts, Construction and Finish.** All parts of The Work shall be of the best quality of their respective kinds and the Contractor must use all diligence to inform itself fully as to the required construction and finish. In no case shall Contractor proceed with The Work without obtaining first from the District Representative such Approval may be necessary for the proper performance of Work.

d. **Contractor's Variation from Contract Document Requirements.** If it is found that the Contractor has varied from the requirements of the Contract Documents including the requirement to comply with all applicable laws, ordinances, rules and regulations, the District Representative may at any time, before or after completion of the Work, order the improper Work removed, remade or replaced by the Contractor at the Contractor's expense.

Article 6 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

a. Project shall be commenced on or before the date stated in District's notice to the contractor to proceed and shall be completed by Contractor in the time specified in the Special Conditions. The notice to the contractor to proceed shall not be issued until all contract documents, including the Contract, the necessary original Certificates of Insurance, Endorsements of Insurance, Performance Bond, Payment Bond and all other documentation and certification required by the Contract have been received by the District. The District has stipulated in the Bid Form and the Special Conditions the schedule for contract submittals. The District is under no obligation to consider early completion of the project and the contract completion date shall not be amended by the District's acceptance of the Contractor's proposed earlier completion date. Furthermore, Contractor shall not, under any circumstances receive additional compensation from the District for indirect, general, administrative or other forms of overhead costs for the period between the time of earlier completion proposed by the Contractor and the official contract completion date. If the work is not completed in accordance with the foregoing, it is understood that the District will suffer damage. It being impractical and infeasible to determine the amount of actual damage, it is agreed that Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the sum stipulated in the Special Conditions for each calendar day of delay until work is completed and accepted. Contractor and his surety shall be liable for the amount thereof. Any money due or to become due the Contractor may be retained to cover said liquidated damages. Should such money not be sufficient to cover said liquidated damages, District shall have the right to recover the balance from the Contractor or his sureties, who will pay said balance forthwith. Regardless of the time lines in the schedule submitted by Contractor, no delay claims shall be accepted by District unless the event or occurrence delays the completion of the Project beyond the contractual completion date.

b. Contractor shall abide by District's determination of what constitutes inclement weather based upon the inspector or geotechnical engineer's recommendation. A bad weather day is a day when the weather causes unsafe work conditions or is unsuitable for work that should not be performed during inclement weather (i.e., exterior finishes). Time extensions shall only be granted when the work that is stopped during inclement weather is on the critical path of the Project schedule. The District's consideration of time extension requests will take into account situations when rain days exceed the normal frequency and amount based on the closest weather station data averaged over the past three years, for the period of this contract and when Contractor can show such rain days impact the critical path. Contractor shall be expected to perform all work he can possibly complete during inclement weather (i.e., interior work).

c. **Extension of Time.** Contractor shall not be charged liquidated damages because of any delays in completion of work due to unforeseeable causes beyond the control and without the fault or negligence of Contractor including, but not restricted to: acts of God, or of public enemy, acts of Government, acts of District or anyone employed by it or acts of another Contractor in performance of a contract with District, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather or delays of subcontractors due to such causes. Contractor shall within five (5) days of beginning of any such delay (unless District grants a further period of time prior to date of final settlement of the contract) notify District in writing of causes of delay; thereupon District shall ascertain the facts and extent of delay and grant extension of time for completing work when, in its judgment, the findings of fact justify such an extension. The District's findings of fact thereon shall be final and conclusive on all parties. In case of a continuing cause of delay, only one claim is necessary. Time extensions to the project should be requested by the Contractor as they occur and without delay. Regardless of the time lines in the schedule submitted by Contractor, no delay claims shall be accepted by District unless the event or occurrence delays the completion of the project beyond the contractual completion date.

d. **Determining Damages for Delay.** District's liability to Contractor for delays for which District is responsible shall be limited to an extension of time for delays unless such delays were unreasonable under the circumstances involved and were not within the contemplation of the parties when the contract was awarded. Contractor agrees that the District's representative shall determine the actual costs to Contractor of any delay for which Contractor may claim damages from District. Such costs, if any, shall be directly related to the project, and shall not include costs that would be borne by the Contractor in the regular course of business, including, but not limited to, office overhead and ongoing insurance costs. The District shall not be liable for any damages which the Contractor could have avoided by any reasonable means including, but not limited to, the judicious handling of forces, equipment, or plant.

e. **Removal or Relocation of Main or Trunkline Utility Facilities.** The Contractor shall not be assessed for liquidated damages for delay in completion of the project, when such delay was caused by the failure of the awarding authority of this contract or the owner of the utility to provide for removal or relocation of the existing main or trunkline utility facilities; however, when the Contractor is aware that removal or relocation of an existing utility has not been provided for, Contractor shall promptly notify the awarding authority and the utility in writing, so that provision for such removal or relocation may be made to avoid and minimize any delay which might be caused by the failure to remove or relocate the main or trunkline utility facilities, or to provide for its removal or relocation. In accordance with section 4215 of the Government Code, if the Contractor while performing the contract discovers any existing main or trunkline utility facilities not identified by the public agency in the contract plans or specifications, he shall immediately notify the public agency and utility in writing. The public utility, where they are the owner, shall have the sole discretion to perform repairs or relocation work or permit the Contractor to do such repairs or relocation work at a reasonable price. The Contractor shall be compensated for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work. Such compensation shall be in accordance with the extra work provisions set out at Article 40 hereof.

Article 7 PROGRESS SCHEDULE

a. Within fourteen (14) days after the date of the Award of the Contract, Contractor shall prepare a baseline progress schedule in hard copy and disk form and shall submit this schedule for the District's approval. The schedule shall clearly identify all staffing and other resources which in the Contractor's judgment are needed to complete the project within the time specified for completion. The schedule shall include milestones and shall include the "critical path" of construction. The Contractor is fully responsible to determine and provide for any and all staffing and resources at levels which allow for good quality and timely completion of the project; the District's approval of the progress schedule does not relieve the Contractor of any such responsibility. Contractor's failure to incorporate all elements of work required for the performance of the contract or any inaccuracy in the schedule shall not excuse the Contractor from performing all work required for a completed project within the specified contract time period, notwithstanding the District's acceptance of the schedule. **The first payment will not be made unless the District has been provided and has accepted the project schedule.**

b. The schedule shall allow enough time for inclement weather. Such schedule shall indicate graphically the beginning and completion dates of all phases of construction, and shall indicate the critical path for all critical, sequential time related activities. All required schedules shall indicate "float time" for all "slack" or "gaps" in the non-critical activities. Submitted construction schedules shall have a duration which does not exceed the contract time. Excess time may be picked up with "float time" at the discretion of the District. A "bar chart" in reasonably complete detail shall be adequate in contracts over $1 million and shall show critical path items. All required schedules shall be periodically updated to reflect changes in the status of the job, including weather delays. **At a minimum, the Contractor shall be required to provide and keep updated a monthly schedule in order to prevent delay claims.**

Article 8 CONTRACT SECURITY

Unless otherwise specified in Special Conditions, Contractor shall furnish a surety bond in an amount equal to 100 percent of contract price as security for faithful performance of this contract and shall furnish a separate bond as security for payment of persons performing labor and furnishing materials in connection with this contract. The Payment Bond must be in the amount of 100 percent of the total amount payable. Both the Payment and the Performance Bonds 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. Aforesaid bonds shall be in form set forth in these contract documents. Upon request of Contractor, District will consider and accept multiple sureties on such bonds.

Article 9 ASSIGNMENT

Contractor shall not assign this contract or any part thereof without prior written consent of District. Any assignment of money due or to become due under this contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under said contract in favor of all persons, firms, or corporations rendering such services or supplying such materials to the extent that claims are filed pursuant to the Civil Code, the Code of Civil Procedure, and/or the Government Code.

Article 10 PROHIBITED INTERESTS

No official of District and no District representative who is authorized in such capacity and on behalf of District to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting or approving any engineering, inspection, construction or material supply contract or any subcontract in connection with construction of project, shall be or become directly or indirectly interested financially in this contract or in any part thereof. No officer, employee, attorney, engineer or inspector of or for District who is authorized in such capacity and on behalf of District to exercise any executive, supervisory or other similar functions in connection with construction of project, shall become directly or indirectly interested financially in this contract or in any partthereof.

Article 11 SEPARATE CONTRACTS

District reserves the right to let other contracts in connection with this work or other work at the same site. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly connect and coordinate his work with theirs.

If any part of Contractor's work depends for proper execution or results upon work of any other contractor, the Contractor shall inspect and promptly report to District any defects in such work that renders it unsuitable for such proper execution and results. His failure to inspect and report shall constitute his acceptance of other contractor's work as fit and proper for reception of his work, except as to defects which may develop in the other contractor's work after execution of contractor's work.

To insure proper execution of his subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District any discrepancy between executed work and contract documents.

Contractor shall ascertain to his own satisfaction the scope of the project and nature of any other contracts that have been or may be awarded by District in prosecution of project to the end that Contractor may perform this contract in the light of such other contracts, if any. Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy at site of project. Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on project. If simultaneous execution of any contract for project is likely to cause interference with performance of some other contract or contracts, District shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously. District shall not be responsible for any damages suffered or for extra costs incurred by Contractor resulting directly or indirectly from award, performance, or attempted performance of any other contract or contracts on project, or caused by any decision or omission of District respecting the order of precedence in performance of contracts.

Article 12 SUBCONTRACTING

a. Contractor agrees to bind every subcontractor by terms of the contract as far as such terms are applicable to subcontractor's work. If Contractor subcontracts any part of this contract, Contractor shall be as fully responsible to District for the acts and omissions of his subcontractor and of persons either directly or indirectly employed by his subcontractor, as he is for acts and omissions of persons directly employed by himself. Nothing contained in these contract documents shall create any contractual relation between any subcontractor and District. The District shall be deemed to be the third party beneficiary of the contract between the contractor and the subcontractor.

b. District's consent to or approval of any subcontractor under this contract shall not in any way relieve Contractor of his obligations under this contract and no such consent or approval shall be deemed to waive any provision of this contract. The District reserves the right of approval of all subcontractors proposed for use on this Project, and to this end, may require financial, performance and such additional information as is needed to secure this approval. If a Subcontractor is not approved, the Contractor shall promptly submit another of the same trade for approval.

c. Substitution or addition of subcontractors shall be permitted only as authorized in chapter 4 (commencing at section 4100), part 1, division 2 of the California Public Contract Code.

Article 13 DISTRICT'S RIGHT TO TERMINATE CONTRACT

District may, without prejudice to any other right or remedy, serve written notice of intent to terminate upon Contractor and his surety stating its intention to terminate this contract if the Contractor (i) refuses or fails to prosecute the work or any separable part thereof with such diligence as will insure its completion within the time specified or any extension thereof, or (ii) fails to complete said work within such time, or (iii) if the Contractor should file a bankruptcy petition, or (iv) if he should make a general assignment for the benefit of his creditors, or (v) if a receiver should be appointed on account of his insolvency, or (vi) if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the work in time specified, or (vii) if he should fail to make prompt payment to subcontractors or for material or labor, or (viii) persistently disregard laws, ordinances or instructions of District, or (ix) otherwise be guilty of a substantial violation of any provision of the contract, or (x) if he or his subcontractors should violate any of the provisions of this contract. The notice of intent to terminate shall state generally the reasons for such intention to terminate. Unless within five days (5) days after the service of such notice, such condition shall cease or such violation shall cease and satisfactory arrangements for the correction thereof be made, this contract shall be deemed to have ceased and terminated. The Contractor then shall not be entitled to receive any further payment until work is finished. Upon the termination of the contract as provided above, District shall immediately serve upon surety and contractor written notice of termination stating that the contract has ceased and terminated. Surety shall have the right to investigate, take over and perform this contract, provided, however, that if surety, within five (5) days after service upon it of said notice of termination, does not give District written notice of its intention to take over and perform this contract and does not commence performance thereof within seven (7) days from the date of service upon it of such notice of termination, District may take over the work and prosecute same to completion by contract or by any other method it may deem advisable for the account and at the expense of Contractor. If Surety does not perform the project work itself, the Surety shall consult with the District regarding its planned choice of a contractor or contractors to complete the project, and upon request by District, Surety shall provide District Evidence of Responsibility of Surety's proposed contractor or contractors. District shall be entitled to reject Surety's choice of contractor or contractors if District determines in is sole discretion that the contractor or contractors are nonresponsible. If Surety provides District written notice of its intention to take over and perform this contract, within fourteen (14) days of such written notice of intent to take over and perform, Surety or its chosen contractor or contractors (if such contractor or contractor's are approved by District) shall provide District a detailed Progress Schedule as specified in Article 7 above. Contractor and his surety shall be liable to District for any excess cost or other damages occasioned the District as a result of Surety or Surety's contractor or contractors takeover and performance. If the District takes over the work as hereinabove provided, the District may, without liability for so doing, take possession of and utilize in completing the work such materials, appliances, plant, and other property belonging to the Contractor as may be on the site of the work and necessary therefore.

If the unpaid balance of the contract price exceeds the expense of finishing work, including compensation for additional managerial and administrative services, such excess shall be paid to Contractor. If such expense shall exceed such unpaid balance, Contractor shall pay the difference to District. Expense incurred by District as herein provided, and damage incurred through Contractor's default, shall be certified by District.
Additionally, this Contract may be terminated by the District for convenience with forty-eight (48) hours written notice to Contractor.

The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the District.

Notwithstanding the foregoing provisions, this contract may not be terminated or modified where a trustee-in-bankruptcy has assumed the contract pursuant to 11 U.S.C. section 365 (Federal Bankruptcy Act).

Article 14 GUARANTEE

Besides guarantees required elsewhere, Contractor shall, and hereby does, guarantee all work for a period of one year after date of acceptance of work by District. Contractor shall repair or replace any or all such work, together with any other work, which may be displaced in so doing, that may prove defective in workmanship and/or materials within a one-year period from date of acceptance without expense whatsoever to District, ordinary wear and tear, unusual abuse or neglect excepted. District will give notice of observed defects with reasonable promptness. Contractor shall notify District upon completion of repairs.

In the event of failure of Contractor to comply with above-mentioned conditions within one week after being notified in writing, District is hereby authorized to proceed to have defects repaired and made good at the expense of Contractor. Contractor hereby agrees to pay costs and charges therefore immediately on demand.

If, in the opinion of the District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District or to prevent interruption of operations of the District, the District will attempt to give the notice required by this article. If the Contractor cannot be contacted or does not comply with the District's request for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this article, proceed to make such correction or provide such attention. The costs of such correction or attention shall be charged against the Contractor. Such action by the District will not relieve the Contractor of the guarantees provided in this article or elsewhere in this contract.

This article does not in any way limit the guarantee on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish District with all appropriate guarantee or warranty certificates upon completion of the project.

Article 15 NOTICE AND SERVICE THEREOF

a. Any notice from one party to the other under the contract shall be in writing and shall be dated and signed by the party giving such notice or by the duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

   1. If notice is given to District, by personal delivery thereof to District's representative or by depositing same in United States mail, enclosed in a sealed envelope addressed to District for attention of said representative or District, postage prepaid andregistered;

   2. If notice is given to Contractor, by personal delivery thereof to said Contractor or to his foreman at site of project, or by depositing same in United States mail, enclosed in a sealed envelope addressed to said Contractor at his regular place of business or at such other address as may have been established for the conduct of work under this contract, postage prepaid andregistered;

   3. If notice is given to surety or other person, by personal delivery to such surety or other person or by depositing same in United States mail, enclosed in a sealed envelope addressed to such surety or person at the address of such surety or person last communicated by him to party giving notice, postage prepaid and registered.

   4. If notice is served by mail, it shall be deemed received and all time periods associated with the giving of notice shall run from the third day after mailing.

Article 16 WORKERS

a. Contractor shall at all times enforce strict discipline and good order among his employees. Contractor shall not employ on work any unfit person or any one not skilled in work assigned to him.

b. Any person in the employ of the Contractor whom District may deem incompetent or unfit shall be dismissed from work and shall not again be employed on it except with the written consent of District.

c. The District reserves the right to request that the Project Supervisor be replaced immediately.

Article 17 WAGE RATES, PAYROLL RECORDS AND DEBARMENT

a. The Contractor is aware of the requirements of California Labor Code sections 1720 et seq. and 1770 et seq., and 1815 et seq., as well as California Code of Regulations, Title 8, section 16000 et seq. (“Prevailing Wage Laws”), which require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. Since this Project involves an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and since the total compensation is $1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. The Contractor shall obtain a copy of the prevailing rates of per diem wages at the commencement of this Agreement from the website of the Division of Labor Statistics and Research of the Department of Industrial Relations located at www.dir.ca.gov/dlsr/. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to perform work on the Project available to interested parties upon request, and shall post copies at the Contractor’s principal place of business and at the Project site. Contractor shall defend, indemnify and hold the District, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or allege failure to comply with the Prevailing Wage Laws.

b. The Contractor and each subcontractor shall forfeit as a penalty to the District not more than two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing wage rate for any work done by him, or by any subcontract under him, in violation of the provisions of the California Labor Code. The difference between such stipulated prevailing wage rate and the amount paid to each

worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

c. As a further material part of this Contract, Contractor agrees to hold harmless and indemnify the District, its Board and each member of the Board, its officers, employees and agents from any and all claims, liability, loss, costs, damages, expenses, fines and penalties, of whatever kind or nature, including all costs of defense and attorneys' fees, arising from any alleged failure of Contractor or its subcontractors to comply with the prevailing wage laws of the State of California. If the District or any of the indemnified parties are named as a party in any dispute arising from the failure of Contractor or its subcontractors to pay prevailing wages, Contractor agrees that the District and the other indemnified parties may appoint their own independent counsel, and Contractor agrees to pay all attorneys' fees and defense costs of the District and the other indemnified parties as billed, in addition to all other damages, fines, penalties and losses incurred by the District and the other indemnified parties as a result of the action.

d. Accurate payroll records shall be kept by the contractor and each subcontractor, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work.

e. It shall be the responsibility of Contractor to comply with Labor Code section 1776 as it may be amended by the Legislature from time to time with respect to each payroll record.

f. Debarment. The Contractor, or any subcontractor working under the Contractor may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Section 1777.1 or Section 1777.7 of the California Labor Code. Any contract on a public works project entered into between the Contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid, or may have been paid to a debarred subcontractor by the Contractor on the project shall be returned to the District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.

Article 18 APPRENTICES

a. Contractor's attention is directed to the provisions of Sections 1777.5, 1777.6, and 1777.7 of the California Labor Code concerning employment of apprentices by the Contractor or any subcontractor under him. The Contractor shall be knowledgeable of and comply with all California Labor Code sections including 1727, 1773.5, 1775, 1777, 1777.5, 1810, 1813, 1860, including all amendments; each of these sections is incorporated by reference into this Contract. The responsibility for compliance with these provisions for all apprentice able occupations rests with the Contractor. Knowing violations of Section 1777.5 will result in forfeiture not to exceed $100 for each calendar day of non-compliance pursuant to Section 1777.7.

Article 19 HOURS OF WORK

a. As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2 of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the Contractor or by any subcontractor on any subcontract under this contract upon the work or upon any part of the work contemplated by this contract is limited and restricted to eight (8) hours during any one-calendar day and forty (40) hours during any one-calendar week, except as hereinafter provided. Notwithstanding the provisions herein above set forth, work performed by employees of Contractor in excess of eight (8) hours per day, and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

b. The Contractor and every subcontractor shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him in connection with the work or any part of the work contemplated by this contract. The record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Law Enforcement, Department of Industrial Relations of the State of California.

c. The Contractor shall pay to the District a penalty of twenty-five dollars ($25) for each worker employed in the execution of this contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2 of the Labor Code.

d. Any work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to District. Refer to Special Conditions for information on specific time-of-day and weekend hour restrictions that apply to this contract.

Article 20 WORKERS' COMPENSATION INSURANCE

a. The Contractor shall provide, during the life of this contract, workers' compensation insurance for all of his employees engaged in work under this contract, on or at the site of the project, and, in case any of his work is sublet, the Contractor shall require the subcontractor similarly to provide workers' compensation insurance for all the latter's employees. Any class of employee or employees not covered by a subcontractor's insurance shall be covered by the Contractor's insurance. In case any class of employees engaged in work under this contract, on or at the site of the project, is not protected under the Workers' Compensation Statutes, the Contractor shall provide or shall cause a subcontractor to provide, adequate insurance coverage for the protection of such employees not otherwise protected. The Contractor shall file with the District certificates of his insurance protecting workers.

b. Company or companies providing insurance coverage shall be acceptable to the District, and in the following form and coverage.

1. Statutory Workers' Compensation and Employer's Liability Coverage: Contractor shall maintain insurance to afford protection for all claims under California Workers' Compensation Act and other employee benefit acts, and in addition, shall maintain Employer's Liability

Insurance for a minimum limit of $1,000,000. The Workers' Compensation Policy shall include the following endorsements, copies of which shall be provided to District:

(a) The Voluntary Compensation Endorsement; and
(b) Broad Form All States Endorsement; and
(c) The Longshoremen's and Harbor Workers endorsement, where applicable to the work under this contract; and
(d) Waiver of Subrogation Endorsement.

Article 21 COMMERCIAL GENERAL LIABILITY AND PROPERTY DAMAGE INSURANCE

a. Contractor shall procure and maintain during the life of this contract and for such other period as may be required herein, at its sole expense, such comprehensive general liability insurance or commercial general liability and property damage insurance as shall protect Contractor and District from all claims for bodily (personal) injury, including accidental death, as well as claims for property damage arising from operations under this contract, and other covered loss, however occasioned, occurring during the policy term. Such policy shall comply with all the requirements of this article, and shall be in the form and amounts as set forth in the Special Conditions hereof. The limits set forth in the Special Conditions shall not be construed to relieve the Contractor from liability in excess of such coverage, nor shall it limit Contractor's indemnification obligations to District, and shall not preclude the District from taking such other actions available to District under other provisions of the contract documents or law.

b. Contractor shall make certain that any and all subcontractors hired by Contractor are insured in accordance with this contract. If any subcontractor's coverage does not comply with the foregoing provisions, Contractor shall indemnify and hold District harmless from any damage, loss, cost, or expense, including attorneys' fees, incurred by District as a result thereof.

c. Company or companies providing insurance coverage shall be acceptable to the District and authorized to conduct business in the State of California.

d. Any general liability policy provided by Contractor hereunder shall contain an endorsement which applies its coverage to District, members of District's board of trustees, and the officers, agents, employees and volunteers of District, the State Allocation Board, if applicable, the District, and the District's consultants, individually and collectively, as additional insureds using form CG2010 11-85 or equivalent which must include products and completed operations coverage, broad form property damage coverage, coverage for collapse, explosion and underground, and include independent contractor coverage.

e. The coverage afforded by the additional insured endorsement described in paragraph d above, shall apply as primary insurance, and any other insurance maintained by District, the members of District's Board of Trustees, or its officers, agents, employees and volunteers, or any self-funded program of District, shall be in excess only and not contributing with such coverage.

f. Contractor shall notify District in writing of the amount, if any, of self-insured retention provided under the General Liability coverage, with a maximum limit of $25,000. District may approve higher retention amounts, based upon review of documentation submitted by Contractor. Such review shall take into consideration Contractor's net worth and reserves for payment of claims of liability against Contractor, which must be sufficient to adequately compensate for the lack of other insurance coverage required hereunder.

g. All general liability policies shall be written to apply to all bodily injury, including death, property damage, personal injury and other covered loss, however occasioned, occurring during the policy term, and shall specifically insure the performance by Contractor of that part of the indemnification contained in Article 25 hereof, relating to liability for injury to or death of persons and damage to property. If the coverage contains one or more aggregate limits, a minimum of 50% of any such aggregate limit must remain available at all times; if over 50% of any aggregate limit has been paid or reserved, District may require additional coverage to be purchased by Contractor to restore the required limits. Contractor may combine primary, umbrella, and as broad as possible excess liability coverage to achieve the total limits indicated above. Any umbrella or excess liability policy shall include the additional insured endorsement, products and completed operations coverage and broad form property damage described in paragraphs d and e, above. To the extent that the umbrella insurer requires notice of changes to the primary policy, notice will be considered to be given and not prejudice the District's rights to recover under the umbrella policy.

h. Contractor and District release each other, and their respective authorized representatives, from any Claims (as defined in Article 25 hereof), but only to the extent that the proceeds received from any policy of liability insurance carried by District or Contractor, other than any self-insurance, covers any such Claim or damage. Included in any policy or policies of liability insurance provided by Contractor hereunder shall be a standard waiver of rights of subrogation against District by the insurance company issuing said policy or policies.

i. If coverage is written on a “claims made” basis, the Certificate of Insurance shall clearly so state. In addition to the coverage requirements specified above, such policy shall provide that:

1. The policy retroactive date coincides with or precedes Contractor's commencement of work under the Agreement (including subsequent policies purchased as renewals or replacements).

2. Contractor will make every effort to maintain similar insurance during the required extended period of coverage following expiration of the Agreement, including the requirement of adding all additional insureds.

3. If insurance is terminated for any reason, Contractor shall purchase an extended reporting provision of at least two years to report claims arising in connection with the Agreement.

4. The policy allows for reporting of circumstances or incidents that might give rise to future claims.

j. Contractor's failure to procure the insurance specified herein, or failure to deliver certified copies or appropriate certificates of such insurance, or failure to make the premium payments required by such insurance, shall constitute a material breach of the contract, and District may, at its option, terminate the Agreement for any such default by Contractor.

k. The requirements as to the types and limits of insurance coverage set forth herein and in the Special Conditions to be maintained by the Contractor, and any approval of said insurance by the District or its insurance advisor(s), are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to the Agreement, including, but not limited to, the provisions concerning indemnification.

l. District shall retain the right at any time to review the coverage, form, and amount of insurance required herein and may require Contractor to obtain insurance reasonably sufficient in coverage, form and amount to provide adequate protection against the kind and extent of risk which exists at the time a change in insurance is required.

m. All deviations from the contractual insurance requirements stated herein must be approved in writing by District's risk manager.

Article 22 AUTOMOBILE LIABILITY INSURANCE

Contractor shall take out and maintain at all times during the term of this Contract Automobile Liability Insurance in the amount of, at least, one million dollars ($1,000,000). Such insurance shall provide coverage for bodily injury and property damage including coverage for non-owned and hired vehicles, in a form and with insurance companies acceptable to the District.

Article 23 BUILDER'S RISK/APPLICABLE INSTALLATION/FIRE INSURANCE

a. It is the Contractor's responsibility to maintain or cause to be maintained builder's risk insurance or applicable installation coverage on all work, material, equipment, appliances, tools, and structures which are a part of the contract and subject to loss or damage by fire, extended coverage, and vandalism and malicious mischief. District accepts no responsibility until the contract is formally accepted by the Governing Board for the work. The Contractor is required to file with the District a certificate evidencing builder's risk or applicable installation of not less than the amount identified in the special conditions insurance coverage.

b. Provide insurance coverage on completed value form, all-risk or special causes of loss coverage.

1. Insurance policies shall be so conditioned as to cover the performance of any extra work performed under the contract.
2. Coverage shall include all materials stored on site and in transit.
3. Coverage shall include Contractor's tools and equipment.
4. Insurance shall include boiler, machinery and material hoist coverage.

c. Company or companies providing insurance coverage shall be acceptable to the District and authorized to conduct business in the State of California.

Article 24 PROOF OF CARRIAGE OF INSURANCE

a. Any insurance carrier providing insurance coverage required by the Contract Documents shall be admitted to and authorized to do business in the State of California unless waived, in writing, by the District Risk Manager. Carrier(s) shall have an A.M. Best rating of not less than an A:VIII. Insurance deductibles or self-insured retentions must be declared by the Contractor, and such deductibles and retentions shall have the prior written consent from the District. At the election of the District the Contractor shall either 1) reduce or eliminate such deductibles or self-insured retentions, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.

b. Contractor shall cause its insurance carrier(s) to furnish the District with either 1) a properly executed original Certificates(s) of Insurance and certified original copies of Endorsements effecting coverage as required herein, or 2) if requested to do so in writing by the District Risk Manager, provide original Certified copies of policies including all Endorsements and all attachments thereto, showing such insurance is in full force and effect. The District, its Directors and officers, employees, agents or representatives are named as Additional Insureds and Provide a Waiver of Subrogation in favor of those parties. Further, said Certificates(s) and policies of insurance shall contain the covenant of the insurance carrier(s) that shall provide no less than thirty (30) days written notice be given to the District prior to any material modification or cancellation of such insurance. In the event of a material modification or cancellation of coverage, the District may terminate or Stop Work pursuant to the Contract Documents, unless the District receives, prior to such effective date, another properly executed original Certificate of Insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto evidencing coverages set forth herein and the insurance required herein is in full force and effect. Contractor shall not take possession, or use the Project site, or commence operations under this Agreement until the District has been furnished original Certificate(s) of Insurance and certified original copies of Endorsements or policies of insurance including all Endorsements and any and all other attachments as required in this Section. The original Endorsements for each policy and the Certificate of Insurance shall be signed by an individual authorized by the insurance carrier to do so on its behalf.

c. It is understood and agreed to by the parties hereto and the insurance company(s), that the Certificate(s) of Insurance and policies shall so covenant and shall be construed as primary, and the District's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

d. The District reserves the right to adjust the monetary limits of insurance coverage's during the term of this Contract including any extension thereof, if in the District's reasonable judgment, the amount or type of insurance carried by the Contractor becomes inadequate.

e. Contractor shall pass down the insurance obligations contained herein to all tiers of sub-contractors working under this Contract.

Article 25 INDEMNIFICATION

Contractor shall defend (with counsel of District's choosing), indemnify and hold the District, its officials, officers, agents, employees, and representatives free and harmless from any and all claims, demands, causes of action, costs, expenses, liabilities, losses, damages or injuries ("Claims"), in law or equity, regardless of whether the allegations are false, fraudulent, or groundless, to property or persons, including wrongful death, to the extent arising out of or incident to any acts, omissions or willful misconduct of Contractor, its officials, officers, employees, agents, consultants and contractors arising out of or in connection with the performance of the Work or this Contract, including claims made by subcontractors for nonpayment, including without limitation the payment of all consequential damages and attorney's fees and other related costs and expenses. Contractor shall defend, at Contractor's own cost, expense and risk, with counsel of District's choosing, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against District, its officials, officers, agents, employees and representatives. To the extent of its liability, Contractor shall pay and satisfy any judgment, award or decree that may be rendered against District, its officials, officers, employees, agents, employees and representatives, in any such suit, action or other legal proceeding. Contractor shall reimburse District, its officials, officers, agents, employees and representatives for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The only limitations on this provision shall be those imposed by Civil Code Section 2782.

Article 26 LAWS AND REGULATIONS

a. Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on conduct of work as indicated and specified. If Contractor observes that drawings and specifications are at variance therewith, he shall promptly notify the District in writing and any necessary changes shall be adjusted as provided in contract for changes in work. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to District, he shall bear all costs arising therefrom.

b. Contractor shall be responsible for familiarity with the Americans with Disabilities Act (ADA) (42 USC 12101 et seq.). Installations of equipment and other devices shall be in compliance with ADA regulations.

Article 27 PERMITS AND LICENSES

Permits and licenses necessary for prosecution of the Work shall be secured and paid for by Contractor, unless otherwise specified in the Contract Documents.

a. Contractor shall obtain and pay for all other permits and licenses required for the Work, including excavation permit and for plumbing, mechanical and electrical work and for operations in or over public streets or right of way under jurisdiction of public agencies other than the District.

b. The Contractor shall arrange and pay for all off-site inspection of the Work related to permits and licenses, including certification, required by the specifications, drawings, or by governing authorities, except for such off-site inspections delineated as the District's responsibility pursuant to the Contract Documents.

c. Before Acceptance of the Project, the Contractor shall submit all licenses, permits, certificates of inspection and required approvals to the District.

Article 28 INSPECTION FEES FOR PERMANENT UTILITIES

All inspection fees and other municipal charges for permanent utilities including, but not limited to, sewer, electrical, phone, gas, water, and irrigation shall be paid for by District. Contractor shall be responsible for arranging the payment of such fees, but inspection fees and other municipal fees relating to permanent utilities shall be paid by District. Contractor may either request reimbursement from District for such fees, or obtain the funds from District prior to paying such fees.

Article 29 EASEMENTS

Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by District, unless otherwise specified.

Article 30 SURVEYS

Surveys to determine location of property lines and corners will be supplied by District. Surveys to determine locations of construction, grading, and site work shall be provided by Contractor.

Article 31 EXCISE TAXES

If under federal excise tax law any transaction hereunder constitutes a sale on which a federal excise tax is imposed and the sale is exempt from such excise tax because it is a sale to a state or local government for its exclusive use, the District, upon request, will execute a certificate of exemption which will certify (1) that the District is a political subdivision of the state for the purposes of such exemption, and (2) that the sale is for the exclusive use of the District. No excise tax for such materials shall be included in any bid price.

Article 32 PATENTS, ROYALTIES, AND INDEMNITIES

The Contractor shall hold and save the District and its officers, agents, and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of this contract, including its use by the District, unless otherwise specifically stipulated in the contract documents.

Article 33 MATERIALS

a. Except as otherwise specifically stated in this contract, Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendency, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete this contract within specified time.

b. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality.

c. Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of work and shall be stored properly and protected as required. Contractor shall be entirely responsible for damage or loss by weather or other causes to materials or work under this contract.

d. No materials, supplies, or equipment for work under this contract shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in work and agrees upon completion of all work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by him, to District free from any claims, liens, or charges. He further agrees that neither he nor any person, firm, or corporation furnishing any materials or labor for any work covered by this contract shall have any right to lien upon premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivisions title to which is commonly retained by utility company or political subdivision. In event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof. Nothing contained in this article, however, shall defeat or impair right of persons furnishing material or labor under any bond given by Contractor for their protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District, and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

e. Materials shall be stored on the Project site in such manner so as not to interfere with any operations of the District or any independent contractor.

Article 34 SUBSTITUTION AFTER CONTRACT IS AWARDED

a. Pursuant to Public Contract Code Section 3400(b) the District may make a finding that is described in the invitation for bids that designates certain products, things, or services by specific brand or trade name.

b. Refer to Section 20 of the Information for Bidders.

Article 35 SHOP DRAWINGS

a. Contractor shall check and verify all field measurements and shall submit with such promptness as to cause no delay in his own work or in that of any other contractor, subcontractor, District, other independent contractor or worker on the Project, three (3) copies of all shop or setting drawings, schedules, and materials list, and all other submittals in accordance with other provisions of the contract required for the work of various trades. Contractor shall sign all submittals affirming that submittals have been reviewed and approved by Contractor prior to submission to District. Each signed submittal shall affirm that the submittal meets all the requirements of the contract documents except as specifically and clearly noted and listed on the cover sheet of the submittal.

b. Contractor shall advise District immediately, if District has not checked and approved with reasonable promptness, such schedules and drawings for conformance with design concept of project and compliance with information given in contract documents. Contractor shall make any corrections required by District, file with him three (3) corrected copies, and furnish such other copies as may be needed for construction. District's approval of such drawings or schedules also shall not relieve Contractor from responsibility for deviations from drawings or specifications unless he has in writing called District's attention to such deviations at time of submission and has secured his written approval. District's approval of such drawings and schedules also shall not relieve contractor from responsibility for errors in shop drawings or schedules. For purposes of this section "reasonable promptness" shall mean such reasonable promptness as to cause no delay in the work or in the activities of the District, Contractor or separate contractors, while allowing sufficient time in the District's professional judgment to permit adequate review.

Article 36 SUBMITTALS

a. Contractor shall furnish for approval, within eight (8) days following award of contract a log of all samples, material lists and certifications, mix designs, schedules, and other submittals, as required in specifications. Such log shall indicate whether samples will be provided as specified and in accordance with other provisions of this contract.

b. Contractor will provide samples and submittals, together with catalogs and supporting data required by District within a reasonable time period so as not to cause delays on the project.

c. This provision shall not authorize any extension of time for performance of this contract. District representative will check and approve such samples, only for conformance with design concept of work and for compliance with information given in contract documents. Work shall be in accordance with approved samples. District action will be taken within ten (10) calendar days after receiving such samples and submittals. If in the District's professional judgment fourteen days is an insufficient amount of time to permit adequate review, District shall, within the initial fourteen (14) day period, notify the Contractor, with a copy to the Inspector and the District, of the amount of time that will be required to respond.

d. If the District's response results in a change in the project, then such change shall be effected by a written change order.

Article 37 CLOSEOUT SUBMITTALS

The Contractor shall be responsible for the timely delivery of the technical manuals, warranties and guarantees as required in the Specifications. The final payment will not be made until the District representative has had an opportunity to review and accept the required documents.

Article 38 COST BREAKDOWN AND PERIODICAL ESTIMATES

Contractor shall furnish on forms Approved by the District:

a. Within ten (10) Days of award of the Contract a detailed estimate giving a complete breakdown of the Contract price.

b. A monthly itemized estimate of Work done for the purpose of making progress payments. In order for the District to consider and evaluate each progress payment application, the Contractor shall submit a detailed measurement of Work performed and a progress estimate of the value thereof before the tenth (10th) Day of the following month.

c. Contractor shall submit, with each of its payment requests, an adjusted list of actual quantities, verified by the District Representative, for unit price items listed, if any, in the Bid Form.

d. Following the District's Acceptance of the Work, the Contractor shall submit to the District a written statement of the final quantities of unit price items for inclusion in the final payment request.

e. The District shall have the right to adjust any estimate of quantity and to subsequently correct any error made in any estimate for payment.

Contractor shall certify under penalty of perjury, that all cost breakdowns and periodic estimates accurately reflect the Work on the Project.

Article 39 PAYMENTS AND RETENTION

a. Each month as soon as practicable after receipt of approved periodical estimate for partial payment, but in order to avoid the payment of interest, in any event within thirty (30) days of receipt of such periodical estimate, there shall be paid to Contractor a sum equal to ninety-five percent (95%) of the value of work performed up to the last day of the previous month, less the aggregate of previous payments. Upon receipt of a payment request the District shall as soon as practicable determine whether the payment request is proper. If the request is determined not to be a proper payment request suitable for payment, it shall be returned to the Contractor as soon as practicable within seven days after receipt and shall be accompanied by a statement in writing as to the reasons why the payment request is not proper. Monthly payments shall be made only on the basis of monthly estimates which shall be prepared by Contractor on a form approved by District and filed before the fifth day of the month during which payment is to be made. Work completed as estimated shall be an estimate only and no inaccuracy or error in said estimate shall operate to release Contractor or any bondsman from damages arising from such work or from enforcing each and every provision of this contract and District shall have the right subsequently to correct any error made in any estimate for payment. Contractor shall not be entitled to have any payment estimates processed or be entitled to have any payment made for work performed so long as any lawful or proper direction concerning work, or any portion thereof given by the District or District shall remain uncomplied with.

b. The final payment of five percent (5%) of the value of work done under this contract, if unencumbered, shall be made within sixty (60) days after the date of completion of the work, provided however, that in the event of a dispute between the District and the Contractor, the District may withhold from the final payment an amount not to exceed one hundred and fifty percent (150%) of the disputed amount. Completion means any of the following as provided by Public Contract Code section 7107:

    1. The occupation, beneficial use, and enjoyment of a work of improvement, excluding any operation only for testing, startup, or commissioning, by the public agency, or its agent, accompanied by cessation of labor on the work of improvement.

    2. The acceptance by the public agency, or its agent, of the work of improvement.

    3. For purposes of this contract, the acceptance by the District means acceptance made only by an action of the governing body of District.

    4. in session. Acceptance by Contractor of said final payment shall constitute a waiver of all claims against District arising from this contract.

    5. After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of 100 days or more, due to factors beyond the control of the Contractor.

    6. After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of 30 days or more, if the public agency files for record a notice of cessation or a notice of completion.

c. This contract is subject to the provisions of Public Contract Code section 7107.

d. At any time after fifty percent (50%) of the work has been completed, if the District, by action of its governing body, finds that satisfactory progress is being made, District may make any of the remaining payments in full for actual work completed or may withhold any amount up to five percent (5%) thereof as District may find appropriate based on the Contractor's progress.

e. Whenever any part of the work is in a condition suitable for use, and the best interest of the District requires such use, the District may take possession of, connect to, open for public use, or use a part thereof. When so used, maintenance and repairs due to ordinary wear and tear or vandalism will be made at District's expense. The use by the District as contemplated in this section shall in no case be construed as constituting acceptance of the work or any part thereof. Such use shall neither relieve the Contractor of any of his responsibilities under the Contract nor act as a waiver by the District of any of the conditions thereof. Contractor shall continue to maintain all insurance, including Builder's Risk insurance, on the project.

Article 40 PAYMENTS WITHHELD

In addition to amounts which the District may retain under other provisions of the Contract Documents the District may withhold payments due to Contractor as may be necessary to cover:

a. Stop Notice Claims.

b. Defective work not remedied.

c. Failure of Contractor to make proper payments to its subcontractors or suppliers.

d. Completion of the Contract if there exists a reasonable doubt that the work can be completed for balance then unpaid.

e. Damage to another contractor or third party.

f. Amounts which may be due the District for claims against Contractor.

g. Failure of Contractor to keep the record ("as-built") drawings up to date.

h. Failure to provide updates on the construction schedule.

i. Site clean-up.

j. Failure of the Contractor to comply with requirements of the Contract Documents.

k. Liquated damages.

l. Legally permitted penalties.

Upon completion of the Contract, the District will reduce the final Contract amount to reflect costs charged to the Contractor, back charges or payments withheld pursuant to the Contract Documents.

District may apply such withheld amount or amounts to payment of such claims or obligations at its discretion. In so doing, District shall be deemed the agent of Contractor and any payment so made by District shall be considered as a payment made under contract by District to Contractor and District shall not be liable to Contractor for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. District will render Contractor a proper accounting of such funds disbursed on behalf of Contractor.

Article 41 CHANGES AND EXTRA WORK

a. Change Order Work.

1) The District, without invalidating the Contract, may order changes in the Work consisting of additions, deletions or other revisions, the Contract amount and Contract time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. A Change Order signed by the Contractor indicates the Contractor's agreement therewith, including any adjustment in the Contract amount or the Contract time, and the full and final settlement of all costs (direct, indirect and overhead) related to the Work authorized by the Change Order.

2) All claims for additional compensation to the Contractor shall be presented in writing before the expense is incurred and will be adjusted as provided herein. No work shall be allowed to lag pending such adjustment, but shall be promptly executed as directed, even if a dispute arises. No claim will be considered after the work in question has been done unless a written contract change order has been issued or a timely written notice of claim has been made by Contractor. Contractor shall not be entitled to claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease or omission of any item or portion of Work to be done. Whenever any change is made as provided for herein, such change shall be considered and treated as though originally included in the Contract, and shall be subject to all terms, conditions and provisions of the original Contract.

3) District Initiated Change. The Contractor must submit a complete cost proposal, including any change in the Contract time, within seven (7) Days after receipt of a scope of a proposed change order, unless the District requests that proposals be submitted in less than seven (7) Days.

4) Contractor Initiated Change. The Contractor must give written notice of a proposed change order required for compliance with the Contract Documents within seven (7) Days of discovery of the facts giving rise to the proposed change order.

5) Whenever possible, any changes to the Contract amount shall be in a lump sum mutually agreed to by the Contractor and the District.

6) Price quotations from the Contractor shall be accompanied by sufficiently detailed supporting documentation to permit verification by the District.

7) If the Contractor fails to submit the cost proposal within the seven (7) Day period (or as requested), the District has the right to order the Contractor in writing to commence the work immediately on a force account basis and/or issue a lump sum change to the contract price in accordance with the District's estimate of cost. If the change is issued based on the District estimate, the Contractor will waive its right to dispute the action unless within fifteen (15) Days following completion of the added/deleted work, the Contractor presents written proof that the District's estimate was in error.

8) Estimates for lump sum quotations and accounting for cost-plus-percentage work shall be limited to direct expenditures necessitated specifically by the subject extra work, and shall be segregated as follows:

(a) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft or type of worker at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State or local laws, as well as assessment or benefits required by lawful collective bargaining agreements. The use of a labor classification which would increase the extra work cost will not be permitted unless the contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

(b) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available in the quantities involved, plus sales tax, freight and delivery. Materials cost shall be based upon supplier or manufacturer's invoice. If invoices or other satisfactory evidence of cost are not furnished within fifteen (15) Days of delivery, then the District Representative shall determine the materials cost, at its sole discretion.

(c) Tool and Equipment Use. No payment will be made for the use of small tools, tools which have a replacement value of $1,000 or less. Regardless of ownership, the rates to be used in determining equipment use costs shall not exceed listed rates prevailing locally at equipment rental agencies, or distributors, at the time the work is performed.

(d) Overhead, Profit and Other Charges. The mark-up for overhead (including supervision) and profit on work added to the Contract shall be according to the following:

i. "Net Cost" is defined as consisting of costs of labor, materials and tools and equipment only excluding overhead and profit. The costs of applicable insurance and bond premium will be reimbursed to the Contractor and subcontractors at cost only, without mark-up.

ii. For Work performed by the Contractor's forces the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work.

iii. For Work performed by a subcontractor, the added cost for overhead and profit shall not exceed fifteen (15%) percent of the Net Cost of the Work to which the Contractor may add five (5%) percent of the subcontractor's Net Cost.

iv. For Work performed by a sub-subcontractor the added cost for overhead and profit shall not exceed fifteen (15 %) percent of the Net Cost for Work to which the subcontractor and general contractor may each add an additional five (5 %) percent of the Net Cost of the lower tier subcontractor.

v. No additional mark-up will be allowed for lower tier subcontractors, and in no case shall the added cost for overhead and profit payable by District exceed twenty-five (25%) percent of the Net Cost as defined herein.

9) For added or deducted Work by subcontractors, the Contractor shall furnish to the District the subcontractor's signed detailed estimate of the cost of labor, material and equipment, including the subcontractor markup for overhead and profit. The same requirement shall apply to sub-subcontractors.

10) For added or deducted work furnished by a Contractor or supplier, the Contractor shall furnish to the District a detailed estimate or quotation of the cost to the Contractor, signed by such Contractor or supplier.

11) Any change in The Work involving both additions and deletions shall indicate a net total cost, including subcontracts and materials. Allowance for overhead and profit, as specified herein, shall be applied if the net total cost is an extra; overhead and profit allowances shall not be applied if the net total cost is a credit. The estimated cost of deductions shall be based on labor and material prices on the date the Contract was executed.

12) Contractor shall not reserve a right to assert impact costs, extended job site costs, extended overhead, constructive acceleration and/or actual acceleration beyond what is stated in the change order for work. No claims shall be allowed for impact, extended overhead costs,

constructive acceleration and/or actual acceleration due to a multiplicity of changes and/or clarifications. The Contractor may not change or modify the District's change order form in an attempt to reserve additional rights.

13) If the District disagrees with the proposal submitted by Contractor, it will notify the Contractor and the District will provide its opinion of the appropriate price and/or time extension. If the Contractor agrees with the District, a change order will be issued by the District. If no agreement can be reached, the District shall have the right to issue a unilateral change order setting forth its determination of the reasonable additions or savings in costs and time attributable to the extra or deleted work. Such determination shall become final and binding if the Contractor fails to submit a claim in writing to the District within fifteen (15) Days of the issuance of the unilateral change order, disputing the terms of the unilateral change order.

14) No dispute, disagreement or failure of the parties to reach agreement on the terms of the change order shall relieve the Contractor from the obligation to proceed with performance of the work, including extra work, promptly and expeditiously.

15) Any alterations, extensions of time, extra work or any other changes may be made without securing consent of the Contractor's surety or sureties.

Article 42 DEDUCTIONS FOR UNCORRECTED WORK

If District deems it inexpedient to correct work injured or not done in accordance with contract, an equitable deduction from contract price shall be made therefore.

Article 43 PAYMENTS BY CONTRACTOR

Contractor shall pay:

a. For all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered,

b. For all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at site of project and balance of cost thereof not later than the 30th day following completion of that part of work in or on which such materials, tools, and equipment are incorporated or used, and

c. To each of his subcontractors, not later than the 5th day following each payment to Contractor, the respective amounts allowed Contractor on account of work performed by respective subcontractor to the extent of such subcontractor's interest therein.

Article 44 CONTRACTOR'S SUPERVISION

a. Unless personally present on the premises where work is being done, Contractor shall keep on the work, during its progress, a competent full-time job (project) superintendent satisfactory to District. The job superintendent shall not be changed except with the written consent of District unless the job superintendent proves to be unsatisfactory to Contractor and ceases to be in his employ. The job superintendent shall represent Contractor in his absence and all directions given to him shall be as binding as if given to Contractor. Other directions shall be so confirmed on written request in each case.

b. Contractor shall give efficient supervision to work, using his best skill and attention to control safety and job coordination. He shall carefully study and compare all drawings, specifications, and other instructions and shall at once report to District any error, inconsistency or omission which he may discover. The Contractor shall not be liable to District for any damage resulting from errors or deficiencies in the contract documents or other instructions by the District.

Article 45 INSPECTOR'S FIELD OFFICE

A determination regarding whether an inspector's field office is required is contained in the Special Conditions.

When required by provisions set forth in the bid documents:

a. Contractor shall provide for the use of inspector a separate trailer or temporary private office of not less than seventy-five square feet of floor area to be located as directed by inspector and to be maintained until removal is authorized by District. The Office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key-type lock or padlock hasp. The inspector's field office shall have heating and air-conditioning and shall be equipped with a telephone, a telephone answering machine, a fax machine and use of an on-site copier at Contractor's expense.

b. A table satisfactory for the study of plans and two chairs shall be provided by Contractor. Contractor shall provide and pay for adequate electric lights, local telephone service, and adequate heat and air conditioning for the field office until authorized removal.

c. The provisions of this section are intended to be complementary to any requirements provided elsewhere in these contract documents, however in the event of conflicts between this section and other provisions of these contract documents, this section shall prevail.

Article 46 DOCUMENTS ON WORK

a. Contractor shall keep one copy of all contract documents, including addenda, change orders, Division I, Title 21 of the California Code of Regulations, Parts 1-5 and 12 of Title 24 of the California Code of Regulations, and the prevailing wage rates applicable at the time of the contract,

which are a part of contract documents, on job at all times. Said documents shall be kept in good order and shall be available to District representative, District and his representatives. Contractor shall be acquainted with and comply with the provisions of said Titles 21 and 24 as they relate to this project. (See particularly Duties of the Contractor, Title 24 California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to this project, particularly Titles 17, 19, 21 and 24.)

b. Contractor shall also make available all books, records, accounts, contracts, bids, etc. upon request of District.

Article 47 RECORD ("AS BUILT") DRAWINGS

a. Contractor shall maintain a clean, undamaged set of contract drawings and shop drawings. In addition to maintaining one complete set of record drawings (herein referred to as "as-builts"), Contractor shall require each trade to do its own as-builts. The trade as-builts shall contain information showing clean and clear drawings with horizontal and vertical controls suitable for conversion to electronic media. Graphic quality must be equal to clean and clear original drawings; adequacy of the drawings shall be determined by the District's representative or District. Contractor shall mark the set to show the actual installation where the installation varies from the work as originally shown. Contractor shall mark whichever drawings are most capable of showing conditions fully and accurately where shop drawings are used, and shall record a cross-reference at the corresponding location on the contract drawings. Contractor shall give particular attention to concealed elements that would be difficult to measure and record at a later date. Contractor shall use colors to distinguish variations in separate categories of the work.

b. Contractor shall note related change order numbers where applicable. Contractor shall organize record drawings sheets into manageable sets, bound with durable paper cover sheets and shall print suitable title, dates and other identification on the cover of each set.

c. At the end of the project, the Contractor shall provide the district representative with a complete set of as-built drawings. The complete set shall contain information showing clean and clear drawings with horizontal and vertical controls suitable for conversion to electronic media. Graphic quality must be equal to clean and clear original drawings; adequacy of the drawings shall be determined by the District's representative or District. The as-builts must show the entire site for each major trade, including but not limited to water, sewer, electrical, data, telephone, cable, fire, alarm, gas, and plumbing.

Article 48 UTILITY USAGE

a. All temporary utilities, including but not limited to electricity, water, gas, and telephone used on work shall be furnished and paid for by Contractor. Contractor shall furnish and install necessary temporary distribution systems, including meters, if necessary, from distribution points to points on site where utility is necessary to carry on the work. Upon completion of work, Contractor shall remove all temporary distribution systems.

b. Contractor shall provide necessary and adequate utilities and pay all costs for water, electricity, gas, oil, and sewer charges required for completion of the project.

c. All permanent meters installed shall be listed in the Contractor's name until completion occurs, as defined in Article 6 hereof, at which time further pro-rating will be determined if necessary. When District begins using the project, charges over and above power actually used for construction will be the responsibility of the District.

d. If contract is for construction in existing facilities, Contractor may, with written permission of District, use District's existing utilities by making prearranged payments to District for utilities used by Contractor for construction.

Article 49 SANITARY FACILITIES

Contractor shall provide sanitary temporary toilet buildings for the use of all workers. All toilets shall comply with local codes and ordinances. Toilets shall be kept supplied with toilet paper and shall have workable door fasteners. Toilets shall be serviced no less than once weekly and shall be present in a quantity of not less than 1 per 20 workers as required by CAL-OSHA regulation. The toilets shall be maintained in a sanitary condition at all times. Use of toilet facilities in The Work under construction shall not be permitted. Any other Sanitary Facilities required by CAL-OSHA shall be the responsibility of the Contractor.

Article 50 TRENCHES

a. Trenches Five Feet or More in Depth. The Contractor shall submit to the District, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches five feet or more in depth. If the plan varies from shoring system standards, the plan shall be prepared by a registered civil or structural engineer. The plan shall not be less effective than the shoring, bracing, sloping, or other provisions of the Construction Safety Orders, as defined in the California Code of Regulations.

Article 51 PROTECTION OF WORK AND PROPERTY

a. The Contractor shall be responsible for all damages to persons or property that occur as a result of his fault or negligence in connection with the prosecution of this contract. Contractor shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the District. All work shall be solely at the Contractor's risk. Contractor shall adequately protect adjacent property from settlement or loss of lateral support as provided by law and contract documents. Contractor shall take all necessary precautions for the safety of employees on the project and shall comply with all applicable safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where work is being performed. Contractor shall erect and properly maintain at all times, as required by conditions and progress of work, all necessary safeguards, signs, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction. Contractor shall designate a responsible member

of his organization on the work, whose duty shall be prevention of accidents. The name and position of the person so designated shall be reported to District by Contractor.

b. In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization from District or District, is hereby permitted to act, at his discretion, to prevent such threatened loss or injury, and he shall so act, without appeal, if so authorized or instructed by District or District. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

c. Contractor shall provide such heat, covering, and enclosures as are necessary to protect all work, materials, equipment, appliances, and tools against damage by weather conditions.

d. Contractor shall take adequate precautions to protect existing sidewalks, curbs, pavements, utilities, adjoining property, and structures, and to avoid damage thereto, and repair any damage thereto caused by construction operations. Contractor shall:

1. Enclose working area with a substantial barricade, arrange work to cause minimum amount of inconvenience and danger to students and faculty in their regular school activities, and perform work which may interfere with school routine before or after school hours. (This subsection applies to new construction on existing sites.)

2. Provide substantial barricades around any shrubs or trees indicated to be preserved.

3. Deliver materials to the building area over a route designated by District.

4. When directed by District, take preventive measures to eliminate objectionable dust.

5. Confine Contractor's apparatus, the storage of materials, and the operations of his workers to limits indicated by law, ordinances, permits, or directions of District. Contractor shall not unreasonably encumber premises with his materials. Contractor shall enforce all instructions of District and District regarding signs, advertising, fires, danger signals, barricades, and smoking and require that all persons employed on work comply with all regulations while on construction site.

6. Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer or land surveyor, licensed in the State of California, at no cost to the District.

Article 52 LAYOUT AND FIELD ENGINEERING

All field engineering required for laying out this work and establishing grades for earthwork operations shall be furnished by the Contractor at his expense. Such work shall be done by a qualified civil engineer or land surveyor licensed in California and approved by the District. Any required "as-built" drawings of site development shall be prepared by the a qualified civil engineer or land surveyor licensed in California and approved by the District.

Article 53 REMOVAL OF HAZARDOUS MATERIALS

a. Since removal and/or abatement of asbestos, PCBs and other toxic wastes and hazardous materials is a specialized field of work with specialized insurance requirements, unless otherwise specified in the contract documents, district shall contract directly for such specialized services, if required, and shall not require the Contractor to subcontract for such services.

b. In the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) which has not been rendered harmless, the Contractor shall immediately stop work in the area affected and report the condition to the District, inspector, and District in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the District and Contractor if in fact the material is asbestos or PCB and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos or PCB, or when it has been rendered harmless, by written agreement of the District and Contractor, or by arbitration under claims resolutions language herein.

Article 54 CUTTING AND PATCHING

a. Contractor shall do all cutting, fitting, or patching of work as required to make its several parts come together properly and fit it to receive or be received by work of other contractors showing upon, or reasonably implied by, the drawings and specifications for the completed structure. Contractor shall make good after them as District may direct.

b. All cost caused by defective or ill-timed work shall be borne by party responsible therefore.

c. Contractor shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor save with consent or at the direction of District.

Article 55 CLEANING UP

Contractor at all times shall keep premises free from debris such as waste, rubbish, and excess materials and equipment caused by this work. Contractor shall not leave debris under, in, or about the premises. Upon completion of work, Contractor shall clean the interior and exterior of the building or improvement including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected so surfaces are free from foreign material or discoloration. Contractor shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and contractor shall also remove temporary fencing, barricades, planking and construction toilet and similar temporary facilities from site. See Special Conditions for additional requirements and instructions.

Article 56 CORRECTION OF WORK BEFORE FINAL PAYMENT

a. Contractor shall promptly remove from the premises all work condemned by District as failing to conform to the contract, whether incorporated or not. Contractor shall promptly replace and re-execute his own work to comply with contract documents without additional expense to District and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal orreplacement.

b. If Contractor does not remove such condemned work within a reasonable time, fixed by written notice, District may remove it and may store the material at Contractor's expense. If Contractor does not pay expenses of such removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell such materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by Contractor.

Article 57 ACCESS TO WORK

District and its representatives shall at all times have access to work wherever it is in preparation or progress. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions under contract.

Article 58 OCCUPANCY

District reserves the right to occupy buildings at any time before completion, and such occupancy shall not constitute final acceptance of any part of work covered by this contract.

Article 59 DISTRICT'S INSPECTOR

a. If applicable, an inspector will be employed by District in accordance with requirements of Title 24 of the California Code of Regulations and will be assigned to the work. His or her duties are specifically defined in Part 1, Title 24, Section 4-342 of the California Code of Regulations.

b. All work shall be under the observation of said inspector. He shall have free access to any or all parts of work at any time. Contractor shall furnish inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting progress and manner of work and character of materials. Inspection of work shall not relieve Contractor from any obligation to fulfill this contract. Inspector or District shall have authority to stop work whenever the provisions of the contract documents are not being complied with and Contractor shall instruct his employees accordingly.

Article 60 TESTS AND INSPECTIONS

a. If the Contract Documents, the District Representative, or any instructions, laws, ordinances, or public authority require any part of the Work to be tested or Approved, Contractor shall provide the District Representative at least two (2) working days' notice of its readiness for observation or inspection. If inspection is by a public authority other than the District, Contractor shall promptly inform the District of the date fixed for such inspection. Required certificates of inspection (or similar) shall be secured by Contractor. Costs for District testing and District inspection shall be paid by the District. Costs of tests for Work found not to be in compliance shall be paid by theContractor.

b. If any Work is done or covered up without the required testing or approval, the Contractor shall uncover or deconstruct the Work, and the Work shall be redone after completion of the testing at the Contractor's cost in compliance with the Contract Documents.

c. Where inspection and testing are to be conducted by an independent laboratory or agency, materials or samples of materials to be inspected or tested shall be selected by such laboratory or agency, or by the District, and not by Contractor. All tests or inspections of materials shall be made in accordance with the commonly recognized standards of national organizations.

d. In advance of manufacture of materials to be supplied by Contractor which must be tested or inspected, Contractor shall notify the District so that the District may arrange for testing at the source of supply. Any materials which have not satisfactorily passed such testing and inspection shall not be incorporated into the Work.

e. If the manufacture of materials to be inspected or tested will occur in a plant or location outside the geographic limits of District, the Contractor shall pay for any excessive or unusual costs associated with such testing or inspection, including but not limited to excessive travel time, standby time and required lodging.

f. Reexamination of Work may be ordered by the District. If so ordered, Work must be uncovered or deconstructed by Contractor. If Work is found to be in accordance with the Contract Documents, the District shall pay the costs of reexamination and reconstruction. If such work is found not to be in accordance with the Contract Documents, Contractor shall pay all costs.

Article 61 SOILS INVESTIGATION REPORT

When a soils investigation report obtained from test holes at the site is available, such report shall not be a part of this contract. Nevertheless, with respect to any such soils investigation and/or geotechnical report regarding the site, it shall be the responsibility of the Contractor to review and be familiar with such report. Any information obtained from such report or any information given on drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, and does not form a part of the contract, unless otherwise specifically provided. Contractor is required to make a visual examination of site and must make whatever tests he deems appropriate to determine the underground condition of the soil. Limited soil tests and subsurface investigations, if any, are available for review and consideration by Contractor and were conducted for the purpose of design only. Subsurface

investigation information is made available by District solely as a matter of convenience and general information for Contractor and Contractor is expected to review and be familiar with such information. No representation is made by District or District that information provided is completely representative of all conditions and materials which may be encountered. If such a report is referenced in the contract documents for performance of the Work, such reference shall be to establish minimum requirements only. Further, no representation is made by District or District that information provided is solely adequate for purposes of construction. District disclaims responsibility for interpretations by Contractor of soil and subsurface investigation information, such as in protecting soil-bearing values, rock profiles, presence and scope of boulders and cobbles, soil stability and the presence, level and extent of underground water. Contractor shall determine means, methods, techniques and sequences necessary to achieve required characteristics of completed Work. Conditions found after execution of the Agreement to be materially different from those reported and which are not customarily encountered in the geographic area of the Work shall be governed by provisions of the General Conditions of the Contract for unforeseen conditions.

Article 62 DISTRICT'S STATUS

a. In general and where appropriate and applicable**,** the District's Director or Maintenance, Operations, and Facilities shall be the District's representative during the construction period and shall observe the progress and quality of the work on behalf of the District. He shall have the authority to act on behalf of District only to the extent expressly provided in the contract documents. After consultation with the Inspector and after using his best efforts to consult with the District, the District shall have authority to stop work whenever such stoppage may be necessary in his reasonable opinion to insure the proper execution of the contract.

b. Contractor further acknowledges that the District shall be, in the first instance, the judge of the performance of this contract.

Article 63 DISTRICT'S DECISIONS

Contractor shall promptly notify District in writing if the District fails within a reasonable time, make decisions on all claims of the District or Contractor and on all other matters relating to the execution and progress of the Work.

Article 64 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party, the contract shall forthwith be physically amended to make such insertion or correction.

Article 65 LABOR/EMPLOYMENT SAFETY

The Contractor shall maintain emergency first aid treatment for his employees which complies with the Federal Occupational Safety and Health Act of 1970 (29 USC, section 651 et seq.).

Article 66 NOTICE OF TAXABLE POSSESSORY INTEREST

The terms of this document may result in the creation of a possessory interest. If such a possessory interest is vested in a private party to this document, the private party may be subjected to the payment of personal property taxes levied on such interest.

Article 67 ASSIGNMENT OF ANTITRUST ACTIONS

Contractor or subcontractor offers and agrees to assign to District all rights, title, and interest in and to all causes of action it may have under section 4 of the Clayton Act (15 USC, section 15) or under the Cartwright Act (chapter 2 (commencing with section 17100) of part 2 of division 7 of the Business and Professions Code), arising from the purchase of goods, services, or materials pursuant to this contract or any subcontract. This assignment shall be made and become effective at the time District tenders final payment to the Contractor, without further acknowledgment by the parties.

Article 68 SUBSTITUTION OF SECURITY

a. Upon the Contractor's request, the District will make payment of funds withheld from progress payments to ensure performance under the contract pursuant to the requirements of Public Contract Code section 22300 if the Contractor deposits in escrow with the District or with a bank acceptable to the District, securities eligible for investment under Government Code section 16430, bank or savings and loan certificates of deposit, or other security mutually agreed to by the Contractor and the District, subject to the following conditions:

    1. The Contractor shall bear the expense of the District and the escrow agent, either the District or the bank, in connection with the escrow deposit made.

    2. Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this section.

    3. The Contractor shall enter into an escrow agreement satisfactory to the District, which agreement shall include provisions governing inter alia:

        (a) The amount of securities to be deposited,

        (b) The providing of powers of attorney or other documents necessary for the transfer of the securities to be deposited,

(c) Conversion to cash to provide funds to meet defaults by the Contractor, including, but not limited to, termination of the Contractor's control over the work, stop notices filed pursuant to law, assessment of liquidated damages or other amounts to be kept or retained under the provisions of the contract,

(d) Decrease in value of securities on deposit,

(e) The termination of the escrow upon completion of the contract.

4. The Contractor shall obtain the written consent of the surety to such agreement.

5. As an alternative to Contractor depositing into escrow securities of a value equivalent to the amounts of retention to be paid to the Contractor, upon Contractor's request, District will make payment of retentions earned directly to the escrow agent at the expense of Contractor pursuant to and in accordance with Public Contract Code section 22300.

Article 69 EXCAVATIONS DEEPER THAN FOUR FEET

If this contract involves digging trenches or other excavations that extend deeper than four feet below the surface, then all of the following shall apply:

a. The Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

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

2. Subsurface or latent physical conditions at the site differing from those indicated.

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

b. Upon receiving any such notice, the District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work District shall issue a change order under the procedures described in this contract.

c. In the event that a dispute arises between the District and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by this contract, but shall proceed with all work to be performed under the contract. A contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties. (Public Contract Code section 7104).

Article 70 COMPLIANCE WITH STATE STORM WATER PERMIT FOR CONSTRUCTION

a. The Contractor shall be required to comply with all conditions 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 (Permit) for all construction activity which results in the disturbance of in excess of one acre of total land area or which is part of a lager common area of development or sale. The Contractor shall be responsible for filing the Notice of Intent and for obtaining the Permit. The Contractor shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) prior to initiating Work. It shall be Contractor's responsibility to evaluate the cost of compliance with the SWPPP in bidding on this contract. Contractor shall comply with all requirements of the State Water Resources Control Board. Contractor shall include all costs of compliance with specified requirements in the contract amount.

b. Contractor shall be responsible for implementing and complying with the provisions of the Permit and the SWPPP, including the standard provisions, monitoring and reporting requirements as required by Permit. Contractor shall provide copies of all reports and monitoring information to District.

c. Contractor shall comply with the lawful requirements of any applicable municipality, the County, drainage district, and other local agencies regarding discharges of storm water to separate storm drain system or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs.

d. Failure to comply with the Permit is a violation of federal and state law. Contractor hereby agrees to indemnify and hold harmless District, its Board Members, officers, agents, employees and authorized volunteers from and against any and all claims, demands, losses or liabilities of any kind or nature which District, its Board Members, officers, agents, employees and authorized volunteers may sustain or incur for noncompliance with the Permit arising out of or in connection with the project, except for liability resulting from the negligence or willful misconduct of District, its Board Members, officers, agents, employees or authorized volunteers. District may seek damages from Contractor for delay in completing the contract in accordance with Article 6 hereof, caused by Contractor's failure to comply with Permit.

Article 71 RESOLUTION OF CONSTRUCTION CLAIMS OF $375,000 OR LESS

a. Claims between District and Contractor shall first be resolved using the procedures set forth at Public Contract Code Section 9204. “Claims” are defined, pursuant to Public Contract Code §9204, as a separate demand by Contractor for one of the following: a time extension for relief from penalties for delay; payment of money or damages arising from work done; or payment of an amount disputed by District.

b. Upon receiving a claim sent by registered or certified mail, District must review and provide a written response within forty-five (45) days that identifies the disputed and undisputed portions of the claim. The forty-five (45) day period to respond may be extended by mutual agreement. The claim is deemed rejected in its entirety if District does not issue a response. Any payment due on an undisputed portion of the claim must be processed within sixty (60) days after District's response. If a claimant disputes District's response or lack thereof, the claimant may demand to meet and confer for settlement of the issues in dispute. Any portion of a claim that remains in dispute after a meet and confer conference will be subject to nonbinding mediation process, as described in Public Contract Code Section 9204. Undisputed and unpaid claims accrue interest at 7% per annum. A subcontractor or lower tier subcontractor may make a claim to District through Contractor, as specified in Public Contract Code Section 9204. However, the procedures in this section shall not supersede the requirements of the Agreement with respect to Contractor's notification to District of such claim or extend the time for the giving of such notice as provided in the Agreement.

c. For public work claims of $375,000 or less between Contractor and District, if District has not elected to resolve disputes by arbitration pursuant to article 7.1 (commencing with section 10240) of chapter 1 of part 2 of the Public Contract Code, the provisions of article 1.5 (commencing with section 20104) of chapter 1 of part 3 of the Public Contract Code apply ("Article 1.5").

d. Each claim shall be submitted in writing before the date of final payment and shall include all necessary substantiating documentation. District shall respond in writing within forty-five (45) days of receipt of the claim if the claim is less than $50,000 ("$50,000 claim") or within sixty (60) days of receipt of the claim, if the claim is over $50,000 but less than or equal to $375,000 ("$50,000-$375,000 claim"). In either case, District may request in writing within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the claimant. Any additional information shall be requested and provided upon mutual agreement of the District and the claimant. District's written response to the claim shall be submitted to claimant within fifteen (15) days after receipt of the further documentation for $50,000 claims or within thirty (30) days after receipt of the further documentation for $50,000-$375,000 claims or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

e. Within fifteen (15) days of receipt of the District's response, if claimant disputes District's written response or within fifteen (15) days of the District's failure to respond within the time prescribed, the claimant shall provide written notification to District demanding an informal conference to meet and confer ("conference") to be scheduled by the District within thirty (30) days. If the claim or any portion of the claim remains in dispute following the meet and confer ("meet and confer conference") to be scheduled by the District within 30 days, the claimant may file a claim as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the period of time within which a claim must be filed is tolled from the time the claimant submits a written claim until the time the claim is denied, including time utilized as a result of the meet and confer process, including time utilized by the meet and confer process.

f. If a civil action is filed to resolve claims within sixty (60) days (but no earlier than thirty (30) days) following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide that both parties select a disinterested third person mediator within fifteen (15) days, shall be commenced within thirty (30) days of the submittal and concluded within fifteen (15) days from the commencement of the mediation unless time is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

g. If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to chapter 2.5 (commencing with section 1141.10) of title 3 of part 3 of the Code of Civil Procedure, notwithstanding section 1141.11 of that code. The Civil Discovery Act of 1986 (article 3 [commencing with section 2016] of chapter 3 of title 3 or part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. The court may, upon request by any party, order any witness to participate in the mediation or arbitration process.

h. Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates not to exceed their customary rate. Such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds. Any party who, after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment, shall pay the attorney's fees of the other party arising out of the trial de novo in addition to payment of costs and fees required under chapter 2.5 (commencing with section 1141.10) of title 3 of part 3 of the Code of Civil Procedure. District shall not fail to pay any portion of a claim which is undisputed unless otherwise provided herein and shall pay interest at the legal rate commencing on the date the suit is filed in court on any arbitration award orjudgment.

i. Any arbitration, mediation or other forms of alternate dispute resolution shall be handled within the boundaries of the District unless otherwise mutually agreed.

Article 72 RESOLUTION OF CONSTRUCTION CLAIMS IN EXCESS OF $375,000

a. Claims between District and Contractor shall first be resolved using the procedures set forth at Public Contract Code Section 9204. "Claims" are defined, pursuant to Public Contract Code §9204, as a separate demand by Contractor for one of the following: a time extension for relief from penalties for delay; payment of money or damages arising from work done; or payment of an amount disputed byDistrict.

b. Upon receiving a claim sent by registered or certified mail, District must review and provide a written response within forty-five (45) days that identifies the disputed and undisputed portions of the claim. The forty-five (45) day period to respond may be extended by mutual agreement. The claim is deemed rejected in its entirety if District does not issue a response. Any payment due on an undisputed portion of the claim must be processed within sixty (60) days after District's response. If a claimant disputes District's response or lack thereof, the claimant may demand to meet and confer for settlement of the issues in dispute. Any portion of a claim that remains in dispute after a meet and confer conference will be subject to nonbinding mediation process, as described in Public Contract Code Section 9204. Undisputed and unpaid claims accrue interest at 7% per annum. A subcontractor or lower tier subcontractor may make a claim to District through Contractor, as specified in Public Contract Code Section 9204. However, the procedures in this section shall not supersede the requirements of the Agreement with respect to Contractor's notification to District of such claim or extend the time for the giving of such notice as provided in the Agreement.

c. If a dispute in excess of a total value of $375,000, arises out of, or relates to this contract, or the breach thereof, and if said dispute cannot be settled through normal contract negotiations, the parties agree that as a condition precedent to the initiation of litigation, the dispute shall first be submitted to mediation pursuant to this Article. The mediation is voluntary, non-binding, and intended to provide an opportunity for the parties to evaluate each other's cases and arrive at a mutually agreeable resolution of the dispute. These provisions relating to voluntary mediation shall not be construed or interpreted as mandatory arbitration.

d. Either party may initiate mediation by notifying the other party or parties in writing. A Request for Mediation shall contain a brief statement of the nature of the dispute or claim, and the names, addresses, and phone numbers of all parties to the dispute or claim, and those, if any, who will represent them in the mediation.

e. The mediation process set forth in this section shall be administered by the American Arbitration Association (AAA) and governed by their rules in effect at the time of filling, or by any other neutral organization agreed to by the parties (hereinafter called "Administrator").

f. The costs for all mediation, including the administrative fees and mediator compensation, will be shared equally by all parties. Fees shall be jointly negotiated by all parties directly with the Administrator. The expenses of witnesses for any party shall be paid by the party producing such witnesses.

g. A single mediator, acceptable to all parties, shall be used to mediate the dispute. The mediator will be knowledgeable in construction matters and will be selected from lists furnished by the Administrator. The initial mediation session shall commence within thirty (30) days of filing, unless otherwise agreed by the parties, or at the direction of the mediator.

h. At least ten (10) days before the first scheduled mediation session, each party shall provide the mediator a brief memorandum setting forth its position with regard to the issues that need to be resolved. At the discretion of the mediator, such memoranda may be mutually exchanged by the parties. At the first session, the parties will be expected to produce all information reasonably required for the mediator to understand the issue presented. The mediator may require each party to supplement such information.

i. Mediation hearings will be conducted in an informal manner and discovery will not be allowed unless agreed to by all parties. All discussions, statements, or admissions will be confidential to the proceedings and will not be used for any other purpose as they relate to either party's legal position. There shall be no stenographic record of the mediation.

j. Mediation sessions are private. The parties and their representatives may attend mediation sessions. Other persons may attend only with the permission of the parties and with the consent of the mediator. The parties may have an attorney present and shall advise the other parties no less than five (5) working days before the mediation of their intent to have an attorney present, so that the other parties may also have their attorneys present.

k. The mediator does not have authority to impose a settlement on the parties but will attempt to assist the parties in reaching a satisfactory resolution of their dispute. The mediator is authorized to conduct joint and separate meetings with the parties and to make oral and written recommendations for settlement. Whenever necessary, the mediator may also obtain expert advice concerning technical aspects of the dispute, provided the parties agree and assume the expenses of obtaining such advice. Arrangements for obtaining such advice shall be made by the mediator or the parties, as the mediator shall determine.

l. The mediator is authorized to end the mediation whenever, in the mediator's judgment, further efforts at mediation would not contribute to a resolution of the dispute between the parties.

m. Any resultant agreements from mediation shall be documented in writing, as agreed upon during the mediation, and may be used as the basis for a change order or other directive as appropriate. All mediation results and documentation shall be non-binding and inadmissible for any purpose in any legal proceedings, unless such admission is otherwise agreed in writing by all parties. Mediators shall not be subject to any subpoena or liability and their actions shall not be subject to discovery in subsequent proceedings.

n. The Mediation shall be terminated by the execution of a Settlement Agreement by the parties; by a written declaration of the Mediator to the effect that further efforts at Mediation are no longer worthwhile; or by a written declaration of a party or parties to the effect that the Mediation proceedings are terminated.

o. If mediation is unsuccessful in resolving the dispute, the parties thereafter may agree to submit the matter to the Administrator for binding arbitration. The parties agree that the matter shall be submitted to one (1) arbitrator, unless they agree to three (3) arbitrators in writing. The parties further agree that they will faithfully observe this agreement, and that the parties will abide by and perform any award rendered by the arbitrator(s), that a judgment of a court having competent jurisdiction may be entered upon the award, and that such judgment shall be enforceable as a final judgment to the fullest extent under the law. The parties agree to split evenly all arbitration and arbitrator(s) fees and expenses. The arbitration shall be subject to, and proceed in accordance with California Code of Civil Procedure, Section 1280 through 1294.2. If the parties do not agree to submit to binding arbitration, neither party is prevented from pursuing other legal remedies.

p. Any arbitration, mediation or other forms of alternate dispute resolution shall be handled within the boundaries of the District unless otherwise mutually agreed.

Article 73 GOVERNING LAW AND VENUE

This Contract shall be governed in accordance with the laws of the State of California and venue shall be in San Diego County.

Article 74 FINGERPRINTING

The determination of fingerprinting requirements are set forth in the Special Conditions.

(a) Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility Involving **More than Limited Contact with Students**.

If the District determines based on the totality of the circumstances concerning the Project that the Contractor and Contractor's employees are subject to the requirements of Education Code section 45125.2 pertaining to Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility because they will have contact other than limited contact with pupils, by execution of the Agreement/Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation, or repair of a school facility where the Contractor and/or Contractor's employees will have more than limited contact with students and the services to be provided do not constitute an emergency or exceptional situation. In accordance with Education Code section 45125.2 the Contractor shall, at Contractor's own expense, (a) install a physical barrier to limit contact with students by Contractor and/or Contractor's employees, or (b) provide for the continuous supervision and monitoring of the Contractor and/or Contractor's employees by an employee of the Contractor who has received fingerprint clearance from the California Department of Justice, or (c) provide for the surveillance of the Contractor and Contractor's employees by a District employee; and (d) Contractor and Contractor's employees shall not use student restroom facilities;

(b) Contracts for Construction, Reconstruction Rehabilitation or Repair of a School Facility Involving **Only Limited Contact With Students.**

If the District determines based on the totality of the circumstances concerning the Project that the Contractor and Contractor's employees are subject to the requirements of Education Code section 45125.2 pertaining to Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility because they will have only limited contact with pupils, by execution of the Agreement/Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation or repair of a school facility involving only limited contact with students. Accordingly, the parties agree that the following conditions apply to any work performed by the Contractor and/or Contractor's employees on a school site: (1) Contractor and/or Contractor's employees shall check in with the school office each day immediately upon arriving at the school site; (2) Contractor and/or Contractor's employees shall inform school office staff of their proposed activities and location at the school site; (3) Once at such location Contractor and/or Contractor's employees shall not change locations without contacting the school office; (4) Contractor and Contractor's employees shall not use student restroom facilities; and (5) If Contractor and/or Contractor's employees find themselves alone with a student, Contractor and Contractor's employees shall immediately contact the school office and request that a member of the school staff be assigned to the work location.

Article 75 COMPLIANCE WITH DTSC GUIDELINES – IMPORTED SOILS

If the project requires the use of imported soils, the Contractor shall be responsible to use and shall certify that the imported material it uses is free of any hazardous and/or toxic substance or material of any nature or type as defined in accordance with California Law and the California Health and Safety Code. The District reserves the right to reject any imported material that has come from agricultural or commercial land uses. Contractor must notify the District of the source of material and comply with the San Diego Regional Water Quality Control Board Resolution 95-63 and when applicable, with the guidelines of the Department of Toxic Substances Control (DTSC).

Article 76 NO ASBESTOS

a. The Contractor will be required to execute and submit a Certificate Regarding Non-Asbestos Containing Materials.

b. Should asbestos containing materials be installed by the Contractor in violation of this certification, or if removal of asbestos containing materials is part of the Project, decontaminations and removals will be performed in accordance with the requirements of all applicable laws and will meet the following criteria:

1. Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency (EPA).

2. The asbestos removal contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant who shall have sole discretion and final determination in this matter.

3. The asbestos consultant shall be chosen and approved by the District which shall have sole discretion and final determination in this matter.

4. The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

c. If removal of asbestos containing materials is part of the project, the cost of all asbestos removal, including, but not necessarily limited to the cost of the asbestos removal contractor, the cost of the asbestos consultant, analytical and laboratory fees, time delays and additional costs that may be incurred by the District shall be borne entirely by the Contractor.

d. Hold Harmless: Interface of work for the Project with work containing asbestos shall be executed by the Contractor at his/her risk and at his/her discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of the Agreement, the Contractor acknowledges the above and agrees to the fullest extent permitted by law to hold harmless the District, its Governing Board, employees, agents, representatives, including its District and assigns, for all asbestos liability which may be associated with this work. The Contractor further agrees to instruct his/her employees with respect to the above-mentioned standards, hazards, risk and liabilities.

Article 77 NOTIFICATION OF THIRD PARTY CLAIMS

The District shall provide the Contractor with timely notification of the receipt by the District of any third party claim relating to this contract, and the District may charge back to the Contractor the cost of any such notification.

Article 78 LABOR COMPLIANCE MONITORING AND ENFORCEMENT

a. Contractor/Subcontractor Registration. A Contractor or subcontractor shall not be qualified to bid on, be listed on a bid proposal (subject to the requirements of Public Contract Code section 4104), or engage in the performance of any contract for public work unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5, except under the limited circumstances set forth in Labor Code section 1771.1(a). This requirement shall apply to any bid proposal and any contract for public work. The District may not accept a bid or enter into a contract for a public works project with an unregistered contractor.

b. Compliance Monitoring and Enforcement. Pursuant to Labor Code section 1771.4, this Contract is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Each Contractor and subcontractor performing work on the Project shall be required to comply with the provisions of the California Labor Code, beginning with section 1720, and the regulations of the Department of Industrial Relations' Division of Labor Standards Enforcement (i.e., the Labor Commissioner), including, but not limited to, the standard provisions requiring payment of prevailing wages, maintenance and submission of certified payroll records, and the hiring of apprentices as appropriate. Unless otherwise specified, the Contractor shall be required to post job site notices regarding the requirements of this paragraph, as prescribed by regulation. For all new public works projects, Contractor and each subcontractor shall be required to furnish the records specified in Labor Code section 1776 directly to the Labor Commissioner at least monthly, or more frequently if specified in the Contract Documents, and in a format prescribed by the Labor Commissioner. This requirement shall apply to all projects.

c. Contractor shall be required to post a notice at the Project site in accordance with Title 8 of the California Code of Regulations, Section 16451.

Article 79 PREQUALIFICATION

a. Prospective bidders are required to be prequalified for projects in excess of one million dollars ($1,000,000) in estimated value using any funds received pursuant to the Leroy F. Greene School Facilities Act of 1998 or any funds from any state school bond. Additionally, subcontractors in the trades of mechanical, electrical and plumbing are required to be pre-qualified. These trades are associated with California State Contractor's License classifications including, but not limited to: C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, and C-46. The prequalification process may be conducted on a per project basis and/or on scheduled basis, as determined by the needs of the District. Prequalification status is valid for one (1) calendar year. This Project is subject to prequalification.

b. The District has developed a standard questionnaire, requirements, and a rating system in order to pre-qualify prospective bidders. Pre-qualification packets are available from the District by request. In addition, the District has developed an appeals process for those prospective bidders who are deemed not qualified and who desire to appeal the District's prequalification decision.

c. The District and/or its appointed representatives will conduct an independent review of, evaluate, and score each contractor's/subcontractor's submitted prequalification packets. Letters regarding each contractor/subcontractor's prequalification status will be sent to each contractor/subcontractor upon completion of the review. Contractors/subcontractors who receive a non-qualified status will also be given specific details as to the basis of the non-qualified rating so that they may have an opportunity to re-submit their packet.

d. If a pre-qualification window is open in conjunction with the Project, prospective bidders must submit pr-qualification packets at least ten (10) days prior to the bid closing deadline. Bidders shall receive notification of their prequalification status at least five (5) days prior to the bid closing deadline. The list of prequalified bidders shall be published at least five (5) days prior to the bid closing timeline. The District will accomplish this task by maintaining an up-to-date list of prequalified bidders and posting it to the District's website.

END OF GENERAL CONDITIONS

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES

BID 24-25-07B

SECTION 8
SPECIAL CONDITIONS

SPECIAL CONDITIONS

A. **Time of Performance**. The work shall be commenced on the date stated in the District's notice to the Contractor to proceed; which date will be not less than ten (10) consecutive calendar days from and after the date of the Notice of Award and shall be completed **in accordance with the scheduled dates as specified below.** District and Contractor each hereby stipulate that the stated performance period is accepted as reasonable and that no other performance period shall be acceptable unless accepted in writing (See Article 2 of Agreement and Article 6 of General Conditions).

Work under this contract shall be scheduled and coordinated in compliance with the following:

1. The anticipated date of the award of the contract is **April 23, 2025.**

2. Contract submittals are due on **May 7, 2025.**

3. **Substitutions to Specified Materials, Processes, or Articles Prior to Bid Submittal**: Any proposals for substitutions of equipment, materials, or products other than what is specified in the bid documents must be submitted, in writing, to the District within **seven (7) calendar days** of the bid documents release date. After reviewing the request, the District will respond with its decision to all parties who have submitted their contact information in accordance with the instructions in the Notice to Contractors. The District has the right to reject any or all requests for substitutions of equipment, materials, or products other than what is specified in the bid documents. The Bidder shall bear all of the District's costs associated with the review of substitution requests.

4. Work shall begin on **or after June 7, 2025,** or as directed by Director of Maintenance, Operations and Facilities.

5. Contractor shall complete work under these agreements by **June 30, 2025.**

6. The Contractor acknowledges that it fully understands the Project work to be performed has been scheduled by the District for a specific time period. In addition the Contractor acknowledges that it fully understands that scheduling has been established for this Project in order to promote the best usage of school facilities and to timely provide an appropriate learning environment for students to the fullest extent possible. With these understandings in mind, pursuant to Article 13 of the General Conditions regarding the District's Right to Terminate Contract, it is acknowledged and understood by the Contractor that it is a substantial violation of the Contract for the Contractor to fail to provide all submittals in the time specified and identified. Furthermore, it is acknowledged and understood by the Contractor that it is a substantial violation of the Contract for the Contractor to fail to provide a full work crew or properly skilled workers with proper and sufficient materials and equipment from the first day of Project work scheduled for **April 3, 2025** or such Project work start date as shall be otherwise specified in writing in the District's Notice to Proceed.

   If the site will not be available after the Notice to Proceed date, Contractor shall utilize this time period for administrative tasks and initial mobilization and shall coordinate such activities with District.

B. **Future Work:** All future work awarded from this bid, shall be coordinated with the District Maintenance, Operations, and Facilities Department representative and Contractor. No work shall be started until scheduling has been agreed upon by all parties. Work will be authorized by purchase order(s) referencing bid 24-25-07B and issued by the District's Purchasing Department. After the purchase order is received, it will be the contractor's responsibility to coordinate the work at each site with the Maintenance, Operations, and Facilities Department, (619) 336-7780, so that the work may be accomplished with a minimum of interference to the sites.

C. **Liquidated Damages – Contract Submittals**: If contract, bonds, and certificates of insurance are not received by the District within the scheduled time period, the agreed liquidated damages established in Article 6 of the General Conditions is Fifty Dollars ($ 50.00) per day for each calendar date the start date is delayed.

Liquidated Damages – Time of Completion: If work under this contract is not ready for the intended use within the specified time period, the agreed liquidated damages established in Article 6 of the General Conditions is Five Hundred Dollars ($ 500.00) per day for each calendar date completion is delayed.

D. **Documents Furnished**. The number of copies of drawings and specifications to be furnished to Contractor free of charge, per Article 3 of the General Conditions, is one (1). Additional copies of the drawings are the responsibility of the contractor.

E. **Bonds**: Contractor shall provide (i) a bid bond or cashier's check payable to National School District in the amount of ten percent (10%) of the contract price; (ii) a payment bond in the total amount of bid or as specified in the Information to Bidders; and (iii) a performance bond in the amount of one hundred percent (100%) of the contract price or as specified in the Information for Bidders.

F. **Additional Insurance**: As provided in the General Conditions, Contractor shall procure and maintain and shall require all subcontractors, if any, whether primary or secondary, to procure and maintain:

Commercial General Liability and Property Damage Insurance
(which provides limits of not less than:

(a) Per occurrence (combined single limit)	$2,000,000
(b) Project Specific Aggregate (for this project only)	$3,000,000
(c) Products/Completed Operations	$2,000,000
(d) Personal & Advertising Injury limit	$1,000,000

G. **Executed Copies:** The number of executed copies of the Agreement, the Performance Bond, and the Payment Bond for Public Works required is two (2).

H. **License Classification:** Each bidder shall be a licensed Contractor pursuant to the Business and Professions Code and shall be licensed in the following classification:

B-General Building Contractor

I. **Certification Requirements:** When specified in the bid documents, the Contractor or Sub Contractor must be certified by the factory or manufacturer to install equipment or other products. Such certifications must be obtained prior to submittal of bid.

J. Fingerprinting:

Pursuant to the provisions of Article 74 of the General Conditions, District Determination of Fingerprinting Requirement Application is as follows:

a. The District has considered the totality of the circumstances concerning the Project and has determined that the Contractor and Contractor's employees:

1. _____ are subject to the requirements of Education Code section 45125.2 and Paragraph (a) of Article 73 of the General Conditions. Fingerprinting and criminal background checks are required for this project.

2. _____X_____ are not subject to the requirements of Education Code section 45125.2 and are subject to Paragraph (b) of Article 73 of the General Conditions.

K. **Cleaning Up:** Pursuant to the specific provisions of Article 55, "Cleaning Up", of the General Conditions, the Contractor is responsible at all times to keep the premises free from debris, waste, rubbish and excess materials and dispose of it in disposal site in accordance with provisions of existing law. The Contractor acknowledges and understands that the Project work here is to be performed on existing and functioning school facilities. The Contractor hereby acknowledges and agrees that if and/or when the Contractor fails to fulfill its clean-up responsibility on a daily basis, the District will undertake to authorize additional regular work or overtime work by its own maintenance and/or custodial employees to keep the premises free from debris, waste and rubbish by authorizing regular and/or overtime work for its maintenance and/or custodial employees. This work time shall be charged back to the Contractor and deducted from the Contractor's progress payments and/or final payment at the rate of **$50.00 per hour for regular time and $75.00 per hour for overtime**. The Contractor will not be notified in advance of any such clean up of the premises to be performed by the District's employees unless the number of hours required in any work week for such clean up of the premises by District employees is both anticipated and estimated by the District to exceed five (5) total weekly hours of either the regular or overtime rates specified herein or the combined regular and overtime rates specified herein.

L. **Inspector's Field Office**: Not applicable to this project.

M. **Calendar and Time-of Day:** Worksites will be available Monday through Saturday, 7:00 AM to 5:00 PM, June 7, 2025 through June 30, 2025. No work is permitted on Thursday, June 19, 2025. A project calendar will be arranged with and at the sole discretion of the Director of Maintenance, Operations, and Facilities.

N. **Staging and Storing**: The District will not provide secure space for the Contractor to store and stage his/her equipment. The Contractor should have product shipped to their location for transport to various District locations. It is the Contractor's responsibility to provide a haul-a-way or other storage facility if needed. Security of said equipment is the responsibility of the Contractor. The Contractor is responsible for restoring and cleaning classrooms in which they are working, after each workday is completed.

END OF SPECIAL CONDITIONS

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NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 9
ESCROW AGREEMENT

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the **NATIONAL SCHOOL DISTRICT** whose address is **1500 N AVENUE, NATIONAL CITY, CA 91950** (hereinafter called "District") and _____ whose address is _____ (hereinafter called "Contractor") and _____ whose address is _____ (hereinafter called "Escrow Agent").

For the consideration hereinafter set forth, the District, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract entered into between the District and Contractor for **Fire Alarm Upgrades, Bid 24-25-07B**, in the amount of__dated (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the District shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the District within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the District and Contractor. Securities shall be held in the name of_____, and shall designate the Contractor as the beneficial District.

(2) The District shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the District makes payment of retention earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the District pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the District. These expenses and payment terms shall be determined by the District, Contractor and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the District.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the District to the Escrow Agent that District consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The District shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the District of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the District.

(8) Upon receipt of written notification from the District certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the District and the Contractor pursuant to Sections (5) to (8), inclusive, of this Escrow Agreement and the District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:	On behalf of Contractor:
_____	_____
Title	Title
_____	_____
Name	Name
_____	_____
Signature	Signature
_____	_____
Address	Address

On behalf of Escrow Agent:

_____
Title

_____
Name

_____
Signature

_____
Address

At the time the Escrow Account is opened, the District and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Escrow Agreement.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

DISTRICT:

NATIONAL SCHOOL DISTRICT

_____
Title

_____
Name

_____
Signature

CONTRACTOR:

_____
Title

_____
Name

_____
Signature

NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 10

CERTIFICATIONS

DRUG-FREE WORKPLACE CERTIFICATION

This Drug-Free Workplace Certification form is part of the Contract made by and between the **NATIONAL SCHOOL DISTRICT** (hereinafter referred to as the "District" and _____ (hereinafter referred to as the ("Contractor") for the **Fire Alarm Upgrades, BID 24-25-07B** Project (hereinafter referred to as the (Project). This form is required from all successful bidders pursuant to the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for procurement of any property or service from any State agency must certify that it will provide a drug-free workplace by doing certain specified acts. It addition, the Act provides that each contract or grant awarded by a State agency may be subject to suspension of payments or termination, and the contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract or grant from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in their workplace and specifying actions which will be taken against employees for violations of the prohibition;

B. Establishing a drug-free awareness program to inform employees about all of the following:

1. The dangers of drug abuse in the workplace;
2. The person's or organization's policy of maintaining a drug-free workplace;
3. The availability of drug counseling, rehabilitation and employee-assistance programs; and
4. The penalties that may be imposed upon employees for drug abuse violations.

C. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision A, and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of the Drug-Free Workplace Act as it now exists or may hereinafter be amended. Particularly, I shall abide by Government Code Section 8355 when performing the Contract for the Project by:

A. Publishing a statement notifying employees concerning the prohibition of controlled substance at my workplace;

B. Establishing a drug-free awareness program; and

C. Requiring that each employee engaged in the performance of the contract be given a copy of the statement required by Section 8355(a) and agree to abide by the terms of that statement.

I also understand that if the District determines that I have either: (a) made a false certification herein; or (b) violated this certification by failing to carry out the requirements of Section 8355, the Contract awarded herein is subject to termination, suspension of payments, or both. I further understand that if I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of the Act.

I acknowledge that I am aware of the provisions of Government Code Section 8350 et seq., and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

Executed on this_____day of_____, 20_____at _____.

_____
Name of Contractor (Print or Type)

By_____
Signature

_____
Print Name

_____
Title

Subscribed and sworn before me
this_____day of_____, 20___

_____
Notary Public in and for
the State of California

(Seal)

My Commission Expires: _____

ASBESTOS-FREE MATERIALS CERTIFICATION

The undersigned declares that he or she is the person who executed the bid for the Fire Alarm Upgrades, BID 24-25-07B (hereinafter referred to as the "Project", and submitted it to the **NATIONAL SCHOOL DISTRICT** (hereinafter referred to as the "District" on behalf of

_____
(hereinafter referred to as the "Contractor").

To the best of my knowledge, information and belief, in completing the Contractor's Work for the Project, no material furnished, installed or incorporated into the Project will contain, or in itself be composed of, any materials listed by the federal or state EPA or federal or state health agencies as a hazardous material.

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

Executed on this_____day of_____, 20_____at _____.

_____
Name of Contractor (Print or Type)

By: _____
Signature

_____
Print Name

_____
Title

Subscribed and sworn before me

this_____day of_____, 20___

_____
Notary Public in and for
the State of California

My Commission Expires: _____

RECYCLED CONTENT CERTIFICATION

The undersigned declares that he or she is the person who executed the bid for **Fire Alarm Upgrades, Bid 24-25-07B** (hereinafter referred to as the "Project", and submitted it to the **NATIONAL SCHOOL DISTRICT** (hereinafter referred to as the "District" on behalf of

_____

(hereinafter referred to as the ("Contractor").

Pursuant to Public Contract Code Section 10308.5, all contractors are required to certify in writing under penalty of perjury the minimum (if not exact) percentage of recycled content in materials, goods, or supplies offered or products used in the performance of their contract, regardless of whether the product meets the required recycled product percentage as defined in Sections 12161 and 12200. The recycled content shall include both post consumer material and secondary material as defined in Public Contract Code Sections 12161 and 12200. The contractor may certify that the product contains zero recycled content. For purposes of this Certification, the definitions found in Public Contract Code Sections 12161 and 12200 shall apply.

I declare under penalty of perjury under the laws of the State of California that the following percentages of Postconsumer Material and Secondary Material is in the materials, goods or supplies offered for, or products used in, the performance of the Contract for the Project:

_____% Postconsumer Material _____% Secondary Material

Executed on this_____day of_____, 20_____at

_____.

_____
Name of Contractor (Print or Type)

By_____
Signature

_____
Print Name

_____
Title

Subscribed and sworn before me

this____day of_____, 20___

_____
Notary Public in and for
the State of California

My Commission Expires: _____

FINGERPRINTING CERTIFICATIONS

CONTRACTOR FINGERPRINTING REQUIREMENTS

CONTRACTOR CERTIFICATION

With respect to the Contract dated _____ 20____ by and between the National School District ("District") and _____ ("Contractor"), Contractor hereby certifies to the District's governing board that it has completed the criminal background check requirements of Education Code Section 45125.1 and that none of its employees that may come in contact with District's pupils have been convicted of a violent felony listed in Penal Code section 667.5(c) or a serious felony listed in Penal Code section 1192.7(c).

_____ _____
Contractor's Representative Date

CONTRACTOR EXEMPTION

Pursuant to Education Code sections 45125.1 and 45125.2, the National School District ("District") has determined that ("Contractor") is exempt from the criminal background check certification requirements for the contract dated _____ 20____ by and between the District and Contractor ("Contract") because:

The Contractor's employees will have limited contact with District students during the course of the Contract;

☐ Emergency or exceptional circumstances exist; or

☒ With respect to contractors constructing, reconstructing, rehabilitating or repairing a school facility, as provided in Section 45125.2, the Contractor has agreed to ensure the safety of pupils at the school facility by the following method(s) specified in Section 45125.2:

_____ Installation of physical barrier at the work site to limit contact with pupils.
_____ Surveillance of employees of the Contractor by school personnel.
XX Continual supervision and monitoring of all employees of the Contractor by an employee of the Contractor whom the DOJ has ascertained has not been convicted of a violent or serious felony.

Supervisor's Name: _____

Soc.Sec. No. _____

_____ _____
School District Official Date

SUBCONTRACTOR'S CERTIFICATION (Required for all Subcontractors)

The National School District ("District") entered into a contract for services with_____("Contractor") on or about_____, 20 _____ ("Contract"). This certification is submitted by_____, a subcontractor to the Contractor for purposes of that Contract ("Subcontractor"). Subcontractor hereby certifies to the District's governing board that it has completed the criminal background check requirements of Education Code section 45125.1 and that none of its employees that may come in contact with District pupils have been convicted of a violent felony listed in Penal Code section 667.5(c) or a serious felony listed in Penal Code section 1192.7(c).

_____ _____
Contractor's Representative Date

SUBCONTRACTOR'S EXEMPTION

The National School District ("District") entered into a contract for services with ("Contractor") on or about_____20_. ("Contract"). Pursuant to Education Code sections 45125.1 and 45125.2, the District has determined that _____, a subcontractor to the Contractor for purposes of that Contract ("Subcontractor"), is exempt from the criminal background check certification requirements for the Contract because:

☐ The Subcontractor's employees will have limited contact with District students during the course of the Contract;

☐ Emergency or exceptional circumstances exist; or

☒ With respect to contractors constructing, reconstructing, rehabilitating or repairing a school facility, as provided in Section 45125.2, the Contractor and/or Subcontractor have agreed to ensure the safety of pupils at the school facility by the following method(s) specified in Section 45125.2:

_____ Installation of physical barrier at the work site to limit contact with pupils.
_____ Surveillance of employees of the Contractor by school personnel.
_XX_ Continual supervision and monitoring of all employees of the Contractor by an employee of the Contractor whom the DOJ has ascertained has not been convicted of a violent or serious felony.

Supervisor's Name: _____

Soc.Sec. No. _____

_____ _____
School District Official Date

CERTIFICATION OF CONTRACTOR AND SUBCONTRACTOR DIVISION OF INDUSTRIAL RELATIONS REGISTRATION

Pursuant to Labor Code Section 1725.5, contractors and all subcontractors 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 any defined public work contract.

I_____, _____certify that
(Name) (Title)

_____ Is currently registered as a contractor with the

Department of Industrial Relations (DIR):

Contractor's DIR Registration Number:_____

Expiration Date:_____

Signee further acknowledges:

1. Contractor shall maintain DIR uninterrupted registered status for the duration of the project.
2. Contractor shall note in the Invitation to Bid and the Information for Bidders the DIR's registration requirement for all subcontractors and their subcontractors.
3. Contractor shall ensure that all first, second, and third tier subcontractors are registered at the time of bid opening and maintain registered status for the duration of the project.
4. Contractor is to furnish DIR Registration Number for all subcontractors within 24 hours of bid opening.
5. Contractor shall substitute any subcontractor with a DIR registered contractor if listed subcontractor is unable to perform the work.

Failure to comply with any of the above listed requirements 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

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NATIONAL SCHOOL DISTRICT

FIRE ALARM UPGRADES
BID 24-25-07B

SECTION 11
SPECIFICATIONS

PROJECT MANUAL FOR CONSTRUCTION OF

FIRE ALARM UPGRADES

at

CENTRAL ELEMENTARY SCHOOL

933 E. AVE.
NATIONAL CITY, CA 91950

PREPARED FOR THE:
NATIONAL ELEMENTARY SCHOOL DISTRICT
FACILITIES PLANNING AND CONSTRUCTION
1500 N. AVE.
NATIONAL CITY, CA 91950

PREPARED BY:
SGPA Architecture & Planning
3111 CAMINO DEL RIO NORTH, STUDIO 500
SAN DIEGO, CA 92018

SGPA PROJECT No. 22341-E-02

DSA Backcheck 2

December 26, 2024

SPECIFICATIONS

SECTION 00 00 02 – PROFESSSIONAL LICENSE STAMPS and SIGNATURES

PROJECT

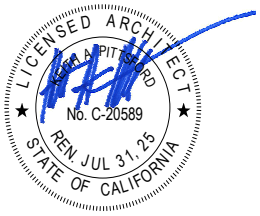
CENTRAL ELEMENTARY SCHOOL – FIRE ALARM UPGRADES
933 E. Ave.
National City, CA 91950
SGPA Project Number 22341-E-02

OWNER

SAN DIEGO UNIFIED SCHOOL DISTRICT
San Diego, California

ARCHITECT

SGPA Architecture and Planning
3111 Camino del Rio North
San Diego, California 92108
Phone: (619) 297-0131
www.sgpa.com



CONSULTANTS

ELECTRICAL/FIRE ALARM
Rizza Engineers
12320 Stowe Drive, Suite C
Poway, CA 92064
Tel: (858) 939-9700

Dec 18, 2024 24191001

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

END OF SECTION 00 00 02

SPECIFICATIONS

TABLE OF CONTENTS

TABLE OF CONTENTS

END OF DOCUMENT 00 01 10

SECTION 01 10 00
SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased Construction.
4. Work by District.
5. District-furnished products.
6. Contractor-furnished, District-installed products.
7. Access to site.
8. Coordination with occupants.
9. Work restrictions.
10. Specification and drawing conventions.
11. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of District's facilities.

1.3 PROJECT INFORMATION

A. Project: Central Elementary School – Fire Alarm Upgrades

B. Project Description: Provide new fire alarm design for two kindergarten classroom buildings.

C. Project Location: 933 E. Ave., National City, California 91950.

D. District: National Elementary School District.
1500 N. Ave.
National City, CA 91950.

E. Architect Identification: The Contract Documents, dated 10/09/2024, 2024, DSA SUBMITTAL V1, were prepared for Project by: SGPA Architecture and Planning, 3111 Camino del Rio North, Suite 500, San Diego, California 92108. Attention: Derek Buskirk, (619) 297-0131, dbuskirk@sgpa.com.

1.4 CONTRACT

A. The Project will be constructed under a single prime contract.

1.5 PRECONSTRUCTION DOCUMENT PERIOD

A. The time period of 14 days, starting with the commencement date in the Notice to Proceed, shall be considered the Preconstruction Documentation Period.

1. This time period shall be used for such things a Preconstruction Meeting, submittal deliverables, Schedule of Values, and Baseline Schedule.
2. Nothing else shall be performed at this time without written permission from the District.

1.6 CONTRACT TIME

A. The Work shall be conducted in a single phase, and shall be substantially completed no later than indicated in Supplemental Conditions.

1.7 WORK BY DISTRICT

A. General: Cooperate fully with District so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by District. Coordinate the Work of this Contract with work performed by District.

1.8 DISTRICT-FURNISHED PRODUCTS

A. District will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing District-furnished products and making building services connections, start-up, testing, and demonstration.

B. District-Furnished Products:

1. XXX

C. Provide District Construction Manager 15 days' prior notice of requirements for delivery to site of all District furnished products. Notify District in writing within 7 days of receiving District furnished products of acceptance or rejection of products furnished. District Construction Manager, after receiving notice, will take appropriate action to have District furnished products made acceptable for Contractor's use. Carefully store

and protect from damage rejected District furnished products until District takes appropriate action.

1.9 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to area of work indicated on drawings.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to District, District's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.10 COORDINATION WITH OCCUPANTS

A. Full District Occupancy: District will occupy site and building(s) during entire construction period. Cooperate with District during construction operations to minimize conflicts and facilitate District usage. Perform the Work so as not to interfere with District's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from District and approval of authorities having jurisdiction.
2. Notify District not less than 72 hours in advance of activities that will affect District's operations.

B. District Limited Occupancy of Completed Areas of Construction: District reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not

interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Partial Completion for each specific portion of the Work to be occupied prior to District acceptance of the completed Work.
2. Before limited District occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, District will operate and maintain mechanical and electrical systems serving occupied portions of Work.
3. On occupancy, District will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.11 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to hours indicated in General Conditions . Exceptions to these hours include utility shutdowns and noisy activity.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by District or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify District not less than seven days in advance of proposed utility interruptions.
2. Obtain District's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate with District operations that may result in high levels of noise and vibration, odors, or other disruption to District occupancy or neighboring properties.

1. Notify District not less than seven days in advance of proposed disruptive operations.
2. Obtain District's written permission before proceeding with disruptive operations.

E. Controlled Substances: Use of tobacco products and other controlled substances on District property is not permitted.

1.12 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 21 00
ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Related Requirements:

1. Section 01 39 00 “Project Forms” for Allowance Payment Record form.

1.3 DEFINITIONS

A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to perform services or defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order (CO).

1.4 ACTION SUBMITTALS

A. Submit proposals for purchase of products, systems, or services included in allowances, in the form specified.

1.5 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

1.6 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 ALLOWANCES

A. Use allowance only as directed by District for District's purposes and only by APRs that indicate amounts to be charged to the allowance.

B. Prepare documents for use of Allowances and Contractor Contingency pursuant to "Adjustment to Guaranteed Maximum Price (GMP) and Contract Time on Account of Changes to the Work" and "Change Orders" sections of Exhibit G to the Master Facilities Lease (General Conditions) and Attachment 1 to Exhibit G ("Payment – Extra, Additional, Deleted Work, Allowances, or Contractor Contingencies").

C. Allowance includes cost of materials, equipment, delivery, receiving, handling, labor, installation, warranty, and insurance. Contractor's supervision, overhead, profit and bond costs to be determined at time of use.

D. At Project closeout, credit unused amounts remaining in the allowance to District by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: For unforeseen conditions, as directed by District. Include a lump sum allowance of $18,750.00**.**

END OF SECTION 01 21 00

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 01 21 00 "Allowances" for products selected under an allowance.
2. Divisions 02 through 33 Sections for specific product and manufacturer requirements and for limitations on substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions include “or equal” products.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at the end of this Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by District and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and Districts.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or sevendays of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Submit requests for substitution not later than 35 days after the Notice to Proceed.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

REQUEST FOR SUBSTITUTION

Re: _____ _____
Section # Project Name

_____ _____
Date Item

To: _____
Architect

From: _____
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	_____	_____
	_____	_____
Phone Number	_____	_____
3. Product Cost	_____	_____
Installation/Labor Cost	_____	_____
4. Delivery Time	_____	_____
Installation Time	_____	_____
5. Product Characteristics	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
6. Dimensions	_____	_____
Effects	_____	_____
7. Guarantee/Warranty	_____	_____
8. CBC-ES 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.

D. Similar Projects

1. _____ _____
   Name Date

   _____
   Address

2. _____ _____
   Name Date

   _____
   Address

E. Maintenance Service/Parts:

Name: _____

Address: _____

What effect does this substitution have on applicable code requirements?

_____

_____

G. Changes to Drawings and Specifications:

Attach information completely describing changes to be made to drawings and specifications.

- Contractor hereby certifies equal performance and assumes of liability for equal performance.
- Contractor hereby agrees to pay for all costs involved with changing the building design, including engineering, drafting, specifications editing, coordination, and preparation of detailed cost estimates, caused by the proposed substitution.

Submitted by:

_____ _____
Signature Printed Name

_____
Title

_____ _____
Company Date

_____
Address

_____
Address

_____ _____

Telephone Email

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

For Use by District's Representative:

District's Design Consultant Date:_____	**School District** Date:_____
☐ Accepted ☐ Not Accepted	☐ Accepted ☐ Not Accepted
By (print): _____	By (print): _____
Title: _____	Title: _____
Signature: _____	Signature: _____

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including the following:

1. Document Control Software.
2. General coordination procedures.
3. Administrative and supervisory personnel.
4. Coordination drawings.
5. RFIs.
6. Project meetings.

B. Related Requirements:

1. Section 01 32 01 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 01 39 00 “Project Forms” for applicable project forms.
3. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
4. Section 01 74 19 “Construction Waste Management and Disposal” for procedures for managing construction waste materials.
5. Section 01 77 00 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Contractor seeking information required by or clarifications of the Contract Documents.

B. District Construction Manager: District Construction Manager is General Contractor’s sole point of contact for all communications with District. Direct all District communications to District Construction Manager. District Construction Manager shall disseminate communications to appropriate District personnel as necessary.

C. Document Control Software: The District has implemented a computerized web-accessed document management and control system for the Project referred to herein as Document Control Software. Use this system for all Project Submittals and RFI's.

The District will provide Contractor personnel with access, support, and training in the use of the Document Control Software at no cost to the Contractor.

The Document Control Software includes the following functions:

1. Project directory;
2. Project correspondence;
3. Meeting minutes;
4. Contract modification forms and logs;
5. RFI forms and logs;
6. Task and issue management;
7. Photo documentation;
8. Schedule and calendar management;
9. Submittal forms and logs;
10. Payment application forms;
11. Drawing and specification document hosting, viewing, and updating;
12. Online document collaboration;
13. Reminder and tracking functions;
14. Archiving functions.

1.4 INFORMATIONAL SUBMITTALS

A. Key Personnel Names: Within ten (10) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, in prominent location in each built facility, and by each temporary telephone. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for District and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities, including those of the District and separate contractors, to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. **Co**ordinate management and recycling of solid waste generated from construction activities. Refer to Section 01 74 19 “Construction Waste Management and Disposal” for tracking, management and recycling requirements for construction activities related waste.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, prepare and submit an RFI using the District’s Document Control Software. Immediately notify the District Construction Manager, Project Inspector, District Project Manager, Architect, and Document Controls Specialist of all RFIs submitted.

1. Architect will return RFIs submitted by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. RFI number, numbered sequentially (for revised RFIs, keep the original RFI number, but add an R1, R2, etc. as a suffix.)
3. Date of RFI Question.
4. Name of Contractor, as well as name of individual from Contractor submitting the RFI.
5. Name of Architect.
6. RFI subject.
7. Detailed description of item needing information or interpretation.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution, if any. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: See Section 01 39 00 “Project Forms” for RFI form. This form will be generated electronically by the Document Control Software from the Contractor’s input data.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five (5) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day. Incomplete RFIs or inaccurately prepared RFIs will be returned without action.

1. RFIs will be returned without action if they are used for any purpose other than a request for information. Such uses include:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

E. RFI Log: The Document Control Software will generate an RFI Log. The Log will be brought to each weekly Project meeting by the District Construction Manager.

1.7 PROJECT MEETINGS

A. General: Attend all project meetings. District Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: District Construction Manager will inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Minutes: District Construction Manager will record meeting results.

B. Preconstruction Conference: District Construction Manager will schedule a preconstruction conference before starting construction, at a time convenient to District, but no later than fourteen (14) days after execution of the Notice to Proceed.

1. District Construction Manager will conduct the conference to review responsibilities and personnel assignments.
2. Attendees: Authorized representatives of District, District's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress. Include the following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communications.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFIs.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. Preparation of record documents.
m. Use of the premises and existing buildings.
n. Work restrictions.
o. Working hours.
p. District's occupancy requirements.
q. Responsibility for temporary facilities and controls.
r. Procedures for moisture and mold control.
s. Procedures for disruptions and shutdowns.
t. Construction waste management and recycling.
u. Parking availability.
v. Office, work, and storage areas.
w. Equipment deliveries and priorities.
x. First aid.
y. Security.

z. Progress cleaning.
aa. Request for Substitution procedures.
bb. Use of District's Document Control Software for RFIs.

4. District Construction Manager will record meeting results and distribute them to all parties in attendance within two (2) days of meeting.

C. Project Closeout Conference: District Construction Manager will schedule and conduct a project closeout conference, at a time convenient to District and Architect, but no later than thirty (30) days prior to the scheduled date of Substantial Completion.

1. Conference will be conducted to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of District, District's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout including the following:

a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for preparing operations and maintenance data.
e. Requirements for delivery of additional stock and spare parts.
f. Requirements for demonstration and training.
g. Preparation of Contractor's punch list.
h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
i. Submittal procedures.
j. The District's partial occupancy requirements.
k. Installation of the District's furniture, fixtures, and equipment.
l. Responsibility for removing temporary facilities and controls.

4. Minutes: District Construction Manager will record meeting results and distribute to all parties in attendance within two (2) days of meeting.

D. Progress Meetings: District Construction Manager will conduct Project Progress Meetings at weekly intervals. Project Progress Meetings are in addition to specific meetings held for other purposes, such as Schedule Review Meetings.

1. Attendees: In addition to representatives of District and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: District Construction Manager will review minutes of previous progress meeting. District Construction Manager will review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Schedule Updating: Revise Look-Ahead Schedule prior to each Progress Meeting. Send (by Email) the revised Look-Ahead Schedule to the District Construction Manager no later than 24 hours before the next Progress Meeting. The Look-Ahead Schedule shall be submitted in PDF electronic file format using computer software acceptable to District Construction Manager.
    b. Review present and future needs of each entity present including:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site utilization.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Progress cleaning.
        11) Quality and work standards.
        12) Status of correction of deficient items.
        13) Field observations.
        14) Status of RFIs.
        15) Status of proposal requests.
        16) Pending changes.
        17) Status of Change Orders.
        18) Documentation of information for payment requests.

3. Minutes: District Construction Manager will record meeting results and distribute to all parties in attendance within two (2) days of the meeting.

E. Monthly Schedule Review Meetings: See Section 01 32 01 “Construction Progress Documentation.”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 31 10
CONTRACTOR PERSONNEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes Contractor personnel to be assigned to this Project.

B. Related Requirements:

1. Section 01 31 00 “Project Management and Coordination” for project management procedures.

2. Section 01 32 01 “Construction Progress Documentation” for scheduler requirements.

1.3 KEY CONTRACTOR PERSONNEL

A. Contractor shall assign the following minimum personnel to the project:

1. Contractor Project Manager: Part time on-site.
2. Contractor Project Superintendent: Part Time on-site.

1.4 REQUIREMENTS FOR KEY PERSONNEL

A. Contractor Project Manager shall have a minimum of five years experience as Project Manager or Superintendent on projects of similar size and scope.

B. Contractor Superintendent shall have a minimum of five years experience as Superintendent on projects of similar size and scope.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 10

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.

B. Related Requirements:

1. Section 01 33 00 "Submittal Procedures" for submitting photographic documentation.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Include same information as corresponding photographic documentation.

B. Color Digital Photographs: Submit image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name of Contractor.
c. Date photograph was taken.
d. Description of location, vantage point, and direction (by compass point), and elevation or story of construction.
e. Unique sequential identifier keyed to accompanying key plan.

C. Video Recording: At the Contractor's option, provide video recording in lieu of photographs specified in paragraph, "Preconstruction Photographs." Submit one copy in digital video disc format acceptable to District.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name of Contractor.
c. Date videotape was recorded.

1.4 USAGE RIGHTS

A. If a professional photographer is engaged to take photographs or video recordings, obtain and transfer copyright usage rights from photographer to District for unlimited reproduction of photographic documentation.

1.5 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in both RAW and JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to District.

1.6 PHOTOGRAPHS

A. General: Take color photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.

C. Preconstruction Photographs: Before starting construction, take photographs that show preconstruction conditions of existing landscape materials; on-site paving; building interior finishes to include ceilings, walls and floors; and interior and exterior equipment that are to remain in place.

1. The photographs will be used to determine responsibility for damage that might appear to have been caused by construction activities. It will be the Contractor's responsibility, through photographs, to show that damage was preexisting.

1.7 VIDEO RECORDINGS

A. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin each video recording with name of Project, Contractor's name, and Project location.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 32 33

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Section 01 31 00 “Project Management and Coordination” for use of District’s Document Control Software.
2. Section 01 32 01 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Section 01 40 02 “Quality Requirements / Contractor Laboratory” for submitting quality control schedules and reports.
4. Section 01 77 00 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
5. Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
6. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
7. Section 01 79 00 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of District's personnel.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. Document Control Software: The District has implemented a computerized web-accessed document management and control system for the Project referred to herein as “Document Control Software.” Use this system for all Project Submittals unless noted otherwise.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect or District and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with Baseline Schedule.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for purchasing.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL FORMATS

A. Architect's Digital Data Files:

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.

a. Digital data drawings files will only be made available with Contractor's signed acceptance of Architect's electronic files/documents use disclaimer.
b. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
c. Digital Drawing Software Program: The Contract Drawings are available in Autodesk Revit 2021.
d. Execute a data licensing agreement in form acceptable to District and Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal timing of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, District, or other parties is indicated, allow 21 days for initial review of each submittal.

5. DSA review: Where submittal must be reviewed by DSA, allow 35 days for review of submittal.

D. Options: Identify options requiring selection by Architect. Make all submittals electronically using District's Document Control Software.

E. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations.

F. Electronic Submittals: Provide submittals using District's Document Control Software. Immediately notify Architect, District Construction Manager, Project Inspector, and Document Control Specialist of all submittals made.

G. Resubmittals: Make resubmittals in same manner as initial submittal.

1. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Furnish one copy of each final action submittal marked with approval notation from Architect's action stamp to Project Inspector.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to Document Control Software.

a. Architect will post annotated file and notify Contractor of posting.

2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Provide certificates and certifications signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.

c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
6. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data**,** unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Prepare Shop Drawings on same digital data software program, version, and operating system as original Drawings.
3. Submit Shop Drawings in the following format:
a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as District's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

a. PDF electronic file.

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

G. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

I. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

J. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

K. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

L. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

M. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

N. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

O. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

P. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

Q. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

R. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of applicable codes and regulations, and calculations, list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

1.7 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

C. BIM Incorporation: Incorporate delegated-design drawing and data files into Building Information Model established for Project.

1. Prepare delegated-design drawings in the following format: Same digital data software program, version, and operating system as the original Drawings.

1.8 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and post review on Document Control Software. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. No Exceptions Noted..

2. Make Corrections Noted.

3. Submit Specified Item.

4. Revise and Resubmit.

B. Informational Submittals: Architect will review each submittal and will post submittal review on Document Control Software only if it does not comply with requirements.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals received from sources other than Contractor will be returned by the Architect without action or may be discarded.

F. Submittals not required by the Contract Documents will be returned by the Architect without action or may be discarded.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 42 00
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the General Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete in place and ready for the intended use.

I. “City”: City of National City, unless specified otherwise.

J. “Includes”, “Including”, and variations thereof: “Includes, but not limited to,…”

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

D. Sources for complete titles of individual Industry Standards:

1. Internet search engines
2. United Master Reference List (UMRL) at https://www.wbdg.org/FFC/DOD/UMRL/UMRL.pdf.

1.4 ABBREVIATIONS AND ACRONYMS

A. Abbreviations and acronyms are to mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." For abbreviations and acronyms not included in these references, use internet search engine according to appropriate context and subject matter.

B. Industry Organizations, Code Agencies, Federal and State Government Agencies, Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.

C. Where duplicates occur, use according to appropriate context and subject matter.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.
2.
3. Section 32 13 13 "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.
4.

1.3 USE CHARGES

A. District’s existing water system and electric power are available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Allow other entities to use temporary services and facilities without cost, including District, Architect, testing agencies, and authorities having jurisdiction.

1.4 SUBMITTALS

A. Water Pollution Control Plan: Provide Water Pollution Control Plan per Section 01 57 23 “Temporary Storm Water Pollution Control”.

B. Project Identification and Temporary Signs: Show materials, fabrication, fasteners, attachment methods, and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Moisture-Protection: Protect materials and construction from water absorption and damage. Protect during delivery, handling, and storage. Discard water-damaged materials, mitigate water intrusion into completed Work, and replace water damaged Work.

C. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

D. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and CBC.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before District's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 8 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

A. All field offices and sanitary facilities must comply with applicable codes and regulations, including disabled accessibility regulations.

B. District Field Offices:

1. Field Offices and Sanitary Facilities: The District does not require field offices or sanitary facilities for this Project.

C. Contractor’s Field Office and Sanitary Facilities:

1. The Contractor's Field Office: Equip with lockable entrances, operable windows and serviceable finishes, and heating and ventilation on foundations adequate for normal loading. Provide adequate space for a conference table with sufficient seating for ten (10) people. Provide the sanitary facilities, wash facilities and drinking water as required by applicable codes and regulations.

D. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Store combustible materials away from building(s).

E. Project Identification Sign

1. Banner: Material and fasteners of quality, durability and attachment necessary to remain in clear, neat, legible condition through project closeout.
2. Replace banner at no additional cost to District if District Construction Manager deems sign is no longer clear, neat and legible.
3. Size, Graphics, Location, Substrate: As shown on drawings.

F. Temporary Signs

1. Provide signs as indicated and as required to inform and protect public and individuals seeking entrance to Project.
2. Provide temporary, directional and caution signs for construction personnel and visitors.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area.
2. Maintain support facilities until Substantial Completion.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of District's existing parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

E. Project Signs: Provide construction for project signs as indicated. Unauthorized signs are not permitted. Maintain and touch up signs so they are legible at all times.

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution." Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.3 TREE, PLANT, AND IRRIGATION SYSTEM PROTECTION

A. Take all measures necessary to protect existing trees, plants and irrigation that is to remain. Measures include, without limitation, substantial barricades to prevent damage. Maintain existing plant materials within the area of Work that are to remain, including periodic watering, trimming, and weeding. Install temporary fencing located to protect vegetation and irrigation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

B. Inspect the irrigation system with the Project Inspector to determine existing conditions prior to commencement of Work. Repair, replace, or correct damage to existing irrigation system and plant materials caused by Contractor operations without adjustment to the Contract Time or the Contract Price. The repair, replacement, or correction of existing plant materials and irrigation system shall bring both to their original condition prior to construction, as determined by the Project Inspector.

C. Ensure existing irrigation systems are operable during selective demolition. Provide temporary power to controller. Provide temporary water source to existing mainline within and outside of project limits as required to maintain an operable system during demolition and construction. If temporary power and/or water is unavailable, hand water existing plant materials within and outside of project limits until automatic system is restored.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Site Enclosure Fence: Before construction operations begin, provide site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

1. Provide and maintain temporary barricades at all hazardous areas to protect both pedestrians and vehicles at all times. This protection shall be for students, faculty and all others at both offsite and onsite work. Adjust and relocate barricades as necessary for protection as work progresses to different locations. Areas that require barricades include such things as trenches, changes to sidewalks/driveways and projections above ground.

E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking on District property.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. District reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 56 39
TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection, pruning, and care of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for temporary site fencing.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches above the ground for trees up to and including 4-inch size at this height and as measured12 inches above the ground for trees larger than 4-inch size.

B. Drip Line: The width of the canopy of the tree as measured by the lateral extent of the foliage on all sides.

C. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection, including:

a. Coordination of Work and equipment movement with the locations of protection zones.
b. Trenching by hand or with air spade within protection zones.
c. Field quality control.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.
2. Indicate extent of trenching by hand or with air spade within protection zones.

1.6 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.7 FIELD CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Storage or use of equipment and non-related construction activities, including pipe-cutting machines, tile-cutting machines, and lumber saws.
3. Storage or dumping of deleterious materials harmful to plant growth. Deleterious materials might include fuels, oils, other petroleum products, acids, liquids, concrete mix or concrete washout, stucco mix or stucco washout, paint or paint washout, and zinc grindings from working with galvanized products in the field.
4. Soil disturbance or grade change.
5. Moving or parking vehicles or equipment, even temporarily.
6. Foot traffic.
7. Erection of sheds or structures.
8. Drainage changes or impoundment of water.
9. Excavation or other digging unless otherwise indicated.
10. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

11. The use of a tree as a temporary power pole, backstop, winch support, anchorage, or other similar function.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

1. Planting Soil: Fertile, friable, surface soil, containing natural loam and complying with ASTM D 5268. Provide topsoil that is free of stones larger than 1 inch in any dimension and free of other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from well-drained sites where soil occurs in depth of 4 inches or more; do not obtain from bogs or marshes.

B. Organic Mulch: Free from deleterious materials, animal waste, sludge waste, lumber or C&D wood by-products, trash and debris, and suitable as a top dressing of trees and shrubs.

1. Type: Ground tree trimming, wood, and bark.
2. Size Range: 1/2 inch to 2-inch diameter.
3. Color: Natural, no dyes.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Agriservice, Inc.
b. Plant’s Choice, Inc.
c. Whittier Fertilizer.
d. Or equal.

C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used when approved by District Construction Manager.

1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 2-inch opening, 0.148-inch-diameter wire chain-link fabric; with pipe posts, minimum 2-3/8-inch-OD line posts, and 2-7/8-inch-OD corner and pull posts; with 0.177-inch-diameter top tension wire and 0.177-inch-diameter bottom

tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.

a. Height: 72 inches.

2. Gates: swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones; leaf width 36 inches.

D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:
1. Lettering: 3-inch-high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain . Tie a 1-inch blue vinyl tape around each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.

1. Apply 3-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to District Construction Manager.
3. Access Gates: Install; adjust to operate smoothly, easily, and quietly; free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by District Construction Manager. Install one sign spaced approximately every 20 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.

C. Maintain protection zones free of weeds and trash.

D. Maintain protection-zone fencing and signage in good condition as acceptable to District Construction Manager and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones.

B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and

maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows.

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: Treat as directed by arborist.
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible according to requirements in Section 31 20 00 "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune tree roots 6 inches outside of the protection zone by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction.

1. Prune to remove only injured, broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).

B. Unless acceptable to District Construction Manager, do not cut tree leaders.

C. Cut branches with sharp pruning instruments; do not break or chop.

D. Do not paint or apply sealants to wounds.

E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.

F. Chip removed branches and dispose of off-site.

3.7 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.

1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.

C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

D. Minor Fill within Protection Zone: Where existing grade is 2 inchesor less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.8 MAINTENANCE

A. Area inside the tree protection zone shall be maintained in a neat manner, removing excessive leaf build-up, fallen twigs and branches, or debris deposited by winds or other causes.

B. When installing concrete adjacent to the tree protection zone, install a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.

3.9 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by District Construction Manager.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by District Construction Manager.

B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that District Construction Manager determines are incapable of restoring to normal growth pattern.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off District property.

END OF SECTION 01 56 39

SECTION 01 57 23
TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. CASQA Construction Handbook / Website Portal – Available as a subscription service at: https://www.casqa.org/resources.

1.2 SUMMARY

A. Section includes all the methods and materials to comply with the Project's Water Pollution Control Program (WPCP), which is required for construction sites with a disturbed area of less than one acre:
   1. The District will supply the Conceptual WPCP, hereafter referred to as the District's WPCP (D-WPCP), to minimize the discharge of pollutants in stormwater due to construction activities.

1.3 ABBREVIATIONS

A. ATS: Advanced Treatment System.

B. BMP: Best Management Practice.

C. CASQA: California Storm water Quality Association.

D. CCR: California Code of Regulations.

E. CGP: Construction General Permit.

F. CSMP: Construction Site Monitoring Program.

G. C-WPCP: CONTRACTOR's WPCP.

H. DTSC: Department of Toxic Substance Control.

I. D-WPCP: DISTRICT's WPCP.

J. EPA: Environmental Protection Agency.

K. ESA: Environmentally Sensitive Area.

L. LRP: Legally Responsible Person.

M. NAL: Numeric Action Level.

N. NEL: Numeric Effluent Limitation.

O. NOI: Notice of Intent.

P. NOT: Notice of Termination.

Q. NPDES: National Pollutant Discharge Elimination System.

R. PRD: Project Registration Document.

S. QSD: Qualified SWPPP Developer.

T. QSP: Qualified SWPPP Practitioner.

U. REAP: Rain Event Action Plan.

V. RWQCB: Regional Water Quality Control Board.

W. SAP: Sampling and Analysis Plan.

X. SMARTS: Storm water Multiple Application and Report Tracking System.

Y. SWPPP: Storm Water Pollution Prevention Plan.

Z. SWRCB: State Water Resources Control Board.

AA. WDID: Waste Discharge Identification Number.

BB. WPCD: Water Pollution Control Drawing.

CC. WPCP: Water Pollution Control Program

1.4 ACTION SUBMITTALS

A. Refer to entire section for all the submittal requirements.

B. C-WPCP:

1. Preliminary.
2. Final.
3. Amendments.

C. Construction Site Monitoring Program (CSMP).

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Contractor's QSP orQualified Person.

B. Hazardous waste documentation.

1.6 QUALITY ASSURANCE

A. QSP Qualifications: Throughout the duration of construction, assign to the Project a QSP with the following training qualifications in accordance with Section VII of the CGP:

1. A person who has attended and passed a State Water Board-sponsored or approved QSP training course.
2. Certified as at least one of the following:

    a. Certified Erosion, Sediment and Storm Water Inspector (CESSWI)™ registered through Enviro Cert International, Inc.
    b. Certified Inspector of Sediment and Erosion Control (CISEC)™ registered through CISEC, Inc.
    c. QSD.

B. Qualified Person Qualifications: Throughout the duration of construction, assign to the Project an appropriately trained individual with at least one of the following training qualifications:

1. Attended and passed a State Water Board-sponsored or approved QSD or QSP training course, or
2. Registered or certified as a:

    a. California Registered Civil Engineer.
    b. California Registered Professional or Engineering Geologist.
    c. California Licensed Landscape Architect.
    d. Professional American Institute of Hydrology Hydrologist.
    e. Certified Professional in Storm Water Quality (CPSWQ)™ registered through Enviro Cert International, Inc.
    f. Certified Professional in Erosion and Sediment Control (CPESC)™ registered through Enviro Cert International, Inc.
    g. Professional in Erosion and Sediment Control registered through the National Institute for Certification in Engineering Technologies (NICET).
    h. Certified Erosion, Sediment and Storm Water Inspector (CESSWI)™ registered through Enviro Cert International, Inc.
    i. Certified Inspector of Sediment and Erosion Control (CISEC)™ registered through CISEC, Inc.

1.7 LAWS, REGULATIONS, AND POLICIES

SPECIFICATIONS

A. A.The following laws, permits, regulations and Board policies apply to the erosion and sediment transport control requirements described in this Section.

1. Construction General Permit (CGP): National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity. State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, NPDES No. CAS000002, adopted September 2, 2009 and associated amendments.
2. California Code of Regulations (CCR), Title 23 (Divisions 2 and 4) and Title 24 (Parts 5 and 11).
3. California Regional Water Quality Control Board (RWQCB) Water Quality Control Plan for the San Diego Basin (9).
4. California Statewide General Permit for Waste Discharge Requirements for Discharges from Utility Vaults and Underground Structures to Surface Waters, Order No. 2006-008-DWQ, NPDES No. CAG990002.
5. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or Other Conveyance Systems, Order No. R9-2002-0020, NPDES No. CAG679001.
6. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges from Groundwater Extraction Waste to Surface Waters within the San Diego Region except for San Diego Bay, Order No. R9-2008-0002, NPDES No. CAG919002 (Waste Discharge Application/NPDES Permit, Form 200, replacing Order No. R9-2001-96).
7. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges from Temporary Groundwater Extraction and Similar Waste Discharges to San Diego Bay, Tributaries Thereto under Tidal Influence, and Storm Drains or Other Conveyance Systems Tributary Thereto, Order No. R9-2007-0034, NPDES No. CAG919001.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Best Management Practices (BMP's) shall be installed and maintained for water pollution control following the guidance of the appropriate BMP Fact Sheet from the CASQA Construction Handbook / Website Portal.

B. BMP's shall be installed and maintained for water pollution control following the guidance of the appropriate BMP Fact Sheet from the CASQA Construction Handbook / Website Portal.

C. Materials needed for the proper installation and operation of BMP's shall comply with the requirements identified on the appropriate CASQA BMP Fact Sheets.

2.2 RAIN GAUGES

SPECIFICATIONS

A. Provide a non-recording rain gauge on the project site and ensure proper positioning to avoid shielding from neighboring buildings, vegetation, etc.

B. Manufacturers: Subject to compliance with requirements, provide one of the following:

1. High Sierra Electronics, Model 2501-00.
2. Belfort Instruments, Model 5-400.
3. Hydrologic Services Pty., Ltd., Standard Model SRG.
4. Or equal.

PART 3 - EXECUTION

3.1 CONSTRUCTION POLLUTION PREVENTION DOCUMENT

A. Provide a designated individual with evidence of adequate training who shall amend the D-WPCP with phase specific details. A copy of the D-WPCP will be provided by the District. Comply with the same without adjustment of the Contract Price or the Contract Time:

1. Implement the C-WPCP with regards to contract work items and all elements required to protect water quality in compliance with the California RWQCB Water Quality Control Plan for the San Diego Basin, available at: http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/basin_plan/index.shtml.
2. In addition to compliance with the Water Quality Control Plan, Comply with all other applicable state, municipal or regional laws, ordinances, rules or regulations governing discharge of storm water, including applicable municipal storm water management programs.

3.2 STORM WATER POLLUTION CONTROL

A. Assign a designated individual with evidence of adequate training who shall amend the D-WPCP, hereafter referred to as the Contractor's WPCP (C-WPCP) with regards to phase-specific details and contract work items.

B. Comply with all applicable state, municipal or regional laws, ordinances, rules or regulations governing discharge of stormwater, including applicable municipal stormwater management programs.

C. Prepare a C-WPCP providing effective soil erosion protection and sediment transport controls including fertilizing, seeding, and mulching for all disturbed areas that are not to be paved or otherwise treated, inactive areas, finished slopes, open space, and completed lots in accordance with the Contract Documents.

D. Include the final C-WPCP with all of its attachments and appendices the Record Documents.

E. Construction activities shall not cause a discharge that alters the physical, thermal, chemical, biological or radioactive properties of any waters of the State; or discharge a contaminant that is likely to cause a nuisance or be harmful to public health, wildlife, or other legitimate uses.

F. To the extent practicable, all construction sites shall provide onsite methods to prevent sediment from entering the existing stormwater systems. Discharge of cloudy or sediment-laden water from any construction site to surface waters or any part of the sewer system is prohibited.

G. All construction sites shall have stabilized construction site ingress and egress to limit tracking of sediment offsite.

H. When sediment escapes the construction site, offsite accumulations of sediment shall be removed by the end of the day. Precautions shall be taken to ensure that sediment does not enter receiving waters.

I. Existing vegetation shall be preserved where possible to minimize erosion.

J. Follow instructions in Part 3 Articles “Temporary BMP Installation, Operation and Maintenance,” “Post-Construction BMP’s,” and “Maintenance Prior to Final Acceptance.”

3.3 CONTRACTOR’S WATER POLLUTION CONTROL PROGRAM (C-WPCP)

A. Do not start work until:

1. An approved copy of the C-WPCP is onsite.
2. A copy of the Erosivity Waiver is onsite, if applicable.

B. Appoint an appropriately trained individual, such as a QSP, to amend and implement the C-WPCP. The appropriately trained individual will hereafter be referred to as the QSP.

C. Contractor is responsible for protecting stormwater systems and receiving waters from the discharge of potential pollutants from the project site due to construction activities by using stormwater pollution control practices, including the following construction support facilities:

1. Staging areas.
2. Storage yards for equipment and materials.
3. Mobile operations.
4. Batch plants for Portland cement concrete and hot mix asphalt.
5. Crushing plants for rock and aggregate.
6. Other facilities installed for construction-related reasons such as haul roads
7. Borrow and disposal sites:

    a. Stormwater pollution due to erosion shall be prevented at an operated borrow or disposal site, during and after completion of construction activities.

b. Upon completion of work, the site shall be left in a condition where stormwater will not collect or stand therein.

D. At least five days before operating any construction support facility that is not covered in the C-WPCP, the QSP shall prepare an amendment to the C-WPCP, showing the location and quantity of water pollution control practices associated with the construction support facility.

E. The QSP shall ensure the documentation of the following:

1. Within 24 hours of completing the weekly inspection – a copy of completed site inspection report.
2. No later than 48 hours after the conclusion of a storm event resulting in a discharge, after a non–stormwater discharge, or after receiving a written notice or an order from the RWCQB or another regulatory agency:

   a. Date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.
   b. Water pollution control practices in use before the discharge, or before receiving the notice or order.
   c. Description of water pollution control practices and corrective actions taken to manage the discharge or cause of the notice.

F. The QSP is responsible for the following:

1. Retaining a printed copy of the CWPCP at the job site.
2. Implementing all aspects of the C-WPCP.
3. Managing work activities in a way that reduces the discharge of pollutants to surface waters, groundwater, and municipal separate storm sewer systems (MS4s).
4. Monitoring and inspecting stormwater pollution control practices at the job site.
5. Notifying the District Construction Manager within six hours when any of the following occur:

   a. Discharges into receiving waters or drainage systems that are causing or could cause water pollution.
   b. Receiving a written notice or order from the RWCQB or any other regulatory agency.

G. Contractor is responsible for implementing appropriate construction site management and erosion and sediment control best management practices as required to protect water quality. Discharges from the site shall not lead to water quality objective exceedances.

H. Contractor is responsible for all delays and all costs associated with preparing, submitting and implementing a SWPPP when the Contractor's actions result in one of the following:

1. One or more acres of soil is disturbed on the project without an Erosivity Waiver.

2. More than five acres of soil is disturbed on the project with an Erosivity Waiver.
3. Failure to complete the project within the Erosivity Waiver's construction window resulting in a rainfall erosivity value (R value) that no longer qualifies the project for an Erosivity Waiver.

3.4 C-WPCP PREPARATION

A. Prepare and implement a C-WPCP as described in the D-WPCP (District template document), including the following:

1. Show the location of disturbed soil areas, water bodies, and water conveyances.
2. Describe the work involved in the installation, maintenance, repair, and removal of temporary and permanent water pollution control practices.
3. Show the locations and types of water pollution control practices that will be used for:

    a. Stormwater and non–stormwater in areas outside the job site, but related to project work activities such as:

        1) Staging areas.
        2) Storage yards.
        3) Access roads.

    b. Activities or mobile operations related to all NPDES permits.
    c. Construction support facilities.

B. Show the locations and types of temporary water pollution control practices that will be used in the work for each construction phase.

C. Include a schedule. The schedule shall show when:

1. Work activities will be performed that could cause the discharge of pollutants into storm water.
2. Water pollution control practices associated with each construction phase will be implemented.
3. Soil stabilization and sediment control practices for disturbed soil areas will be implemented.

D. Amend the C-WPCP whenever:

1. Changes in work activities could affect the discharge of pollutants.
2. Water pollution control practices are added by change order.
3. Water pollution control practices are added at your discretion.
4. Changes in the amount of disturbed soil are substantial.
5. Objectives for reducing or eliminating pollutants in stormwater discharges have not been achieved.
6. The project receives a written notice or order from the RWCQB or another regulatory agency.

E. Start the following process for C-WPCP acceptance within 15 days after Notice to Proceed:

1. Submit a copy of the C-WPCP. The District will provide comments and specify the date when the review stopped when revisions are required.
2. Resubmit a revised C-WPCP within seven days of receiving the District's comments. The District's review will resume when the complete revised C-WPCP has been resubmitted.
3. When the District accepts the revised C-WPCP, submit an electronic copy and a printed copy of the accepted revised C-WPCP.
4. When the RWCQB is required to review the accepted C-WPCP, submit one copy of the accepted document to the RWCQB for its review and comment.
5. When the RWCQB orders changes to the C-WPCP, amend the document within three days.

F. The C-WPCP shall include procedures regarding the following:

1. Monitoring of the National Weather Service forecast on a daily basis. For the National Weather Service forecast, go to: http://www.srh.noaa.gov/ forecast.
2. Installation of applicable construction BMPs and practices as required to avoid exceedances of the water quality objectives defined in the San Diego Basin Plan. Refer to the CASQA Construction Handbook for guidance in the installation, maintenance, or selection of additional BMPs (when necessary).
3. Stormwater pollution control practices shall be installed within 15 days of work activities that disturb soil or before predicted precipitation, as determined necessary for the protection of water quality.

G. The QSP shall oversee inspections of the stormwater pollution control practices identified in the C-WPCP:

1. Before a forecasted storm.
2. After precipitation that causes site runoff.
3. At 24-hour intervals during extended precipitation.
4. On a predetermined schedule of at least once a week.

H. The QSP shall oversee daily inspections for:

1. Storage areas for hazardous materials and wastes.
2. Hazardous waste disposal and transporting activities.
3. Hazardous material delivery and storage activities.

I. Whenever a deficiency is identified in the implementation of the accepted C-WPCP:

1. Correct the deficiency immediately, unless the District agrees to a later date for making the correction.
2. Correct the deficiency before precipitation occurs.
3. The District may correct the deficiency and deduct the cost of correcting the deficiency from payment when the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation.

4. Continue C-WPCP implementation during any suspension of work activities.

J. Whenever there is the concern that the C-WPCP may be inadequate to comply with applicable water quality objectives or water quality standards as contained in the California Toxics Rule, Municipal Permit or San Diego Basin Plan, the QSP may request changes to the stormwater pollution control practices or the District may require changes to stormwater pollution control practices. Changes may include additional or new stormwater pollution control practices.

3.5 CONSTRUCTION SITE MANAGEMENT

A. Implement effective erosion and sediment control practices as well as effective handling, storage, usage, and disposal practices thereby controlling potential pollutants on the job site before they come in contact with storm drain systems and receiving waters

B. Guidance for the implementation of BMP's required to control pollution from erosive activities at the job site is located in Section 3 of the CASQA Construction Handbook (Erosion and Sediment Control BMP's).

C. Guidance for the implementation of BMP's required to control material pollution and manage waste and non–stormwater discharges at the job site is located in Section 4 of the CASQA Construction Handbook (Non-Stormwater Management and Material Management BMP's).

D. The following Construction Site Management is required for construction materials and potential pollutants:

1. The QSP shall keep an inventory of the materials and equipment onsite that are not designed to be outdoors and exposed to environmental conditions (potential pollutant sources).
2. The QSP shall conduct an assessment from the inventory of potential pollutant sources and identify any areas of the site where additional BMP's are necessary to reduce or prevent pollutants in stormwater discharges and authorized non-stormwater discharges. Stormwater discharges and authorized non-stormwater discharges regulated by the CGP shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges. At a minimum, the QSP shall consider the following:

    a. The quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.
    b. The degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.
    c. The direct and indirect pathways that pollutants may be exposed to stormwater or authorized non-stormwater discharges, including an assessment of past spills or leaks, non-stormwater discharges, and discharges from adjoining areas.

d. Sampling results, visual observations, and inspection records.
e. The effectiveness of existing BMP's in reducing or preventing pollutants in stormwater discharges and authorized non-storm water discharges.
f. Nothing in the CGP relieves the Contractor from any responsibilities, liabilities, or penalties to which the Contractor is or may be subject to under Section 311 of the Clean Water Act.

3. The QSP shall ensure that the appropriate MSDS forms are available onsite at least five days before hazardous substances are used or stored onsite.

E. The following Good Site Management Housekeeping is required for construction materials:

1. Minimize exposure of potential pollutant sources to precipitation.
2. Cover and berm (contain) stockpiled construction materials that are not actively being used, materials that are adversely affected by wind and rain such as fertilizer, mulches, topsoil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.
3. Stack erodible landscape material on pallets and cover or store such materials when not being used or applied.
4. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).
5. Implement BMP's to prevent the offsite tracking of loose construction and landscape materials.
6. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.
7. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

F. The following Good Site Management Housekeeping is required for waste management:

1. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.
2. Ensure the containment of portable toilets to prevent discharges of pollutants to the storm drain system or receiving water.
3. Clean portable toilets on a regular basis inspecting them for leaks and spills. When a problem is identified, corrective action shall be taken in a timely manner (within 72 hours or prior to any likely precipitation event, whichever is more immediate).
4. Cover waste disposal containers at the end of every business day and during rain events.
5. Prevent discharges from waste disposal containers to the storm drain system or receiving water.
6. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.
7. Implement procedures that effectively address hazardous and non-hazardous spills.
8. Develop a spill response and implementation plan as part of the C-SWPPP prior to commencement of construction activities.

9. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

G. The following Good Site Management Housekeeping is required for vehicle storage and maintenance:

1. Prevent any of the following substances from discharging to the storm drains or surface waters (not meant to be an all-inclusive list):

   a. Transfer case oil.
   b. Antifreeze.
   c. Brake fluid.
   d. Power steering fluid.
   e. Transmission fluid.
   f. Hydraulic fluid.
   g. Grease.
   h. Fuel.
   i. Oil.

2. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMP's.
3. Clean leaks immediately and disposing of leaked materials properly.

H. The following Good Site Management Housekeeping is required to control air deposition of site materials and from site operations (dust control):

1. Effective wind erosion control BMP's shall be implemented year round to prevent or alleviate dust, which may contain such particulates as sediment, nutrients, trash, metals, bacteria, oil and grease, and organics.
2. Excavation, transportation, and handling of material containing hazardous waste or contamination shall result in no visible dust migration

I. Document all Good Site Management Housekeeping BMP's in accordance with the nature and phase of the construction project (Grading and Land Development Phase, Streets and Utilities, or Vertical Construction for traditional land development projects).

J. The following Good Site Management Housekeeping is required for non-stormwater management:

1. Effective BMP's shall be implemented to control all non-stormwater discharges during construction.
2. Vehicles shall be washed in such a manner as to prevent non-stormwater discharges to surface waters or MS4 drainage systems.
3. Streets shall be cleaned in such a manner as to prevent unauthorized non-stormwater discharges from reaching surface water or MS4 drainage systems.
4. Dewatering shall be conducted in such a manner as to prevent sediment-laden or contaminated discharge from leaving the site:

a. The discharge of water from utility vaults and underground structures and surface waters is covered under the California Statewide permit, Order No. 2006-008-DWQ. Dischargers shall comply with BMPs that ensure the water discharged is not contaminated and will not create an adverse water quality impact when discharged.
b. The dewatering of construction excavations is subject to San Diego Regional Water Quality Control Board regulations depending on where the accumulated construction water is discharged:
    1) Discharge to the sanitary sewer: Discharge of accumulated water to the sanitary sewer is not allowed without the permission of the Department of Public Works. Permission may be obtained by submitting a request to the appropriate Municipalities Public Works Department.
c. Copy of the written approval to discharge into a sanitary sewer system at least five days before starting discharge activities, if applicable. This information shall be on site when discharging to a municipal sanitary sewer system.
d. Copy of the written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, if applicable. This information shall be on site when discharging to a municipal sanitary sewer system.

5. Authorized non-stormwater discharges regulated by the CGP shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges:

    a. Immediately stop working and notify the District if any of the following is discovered onsite:

        1) Contractor reasonably believes that the substance discovered is asbestos as defined in Labor Code § 6501.7 or a hazardous substance as defined in Health & Safety Code § 25316 and § 25317.
        2) An identifiable substance that has not been made harmless is discovered.

    b. Handle, store, and dispose of hazardous waste under 22 CA Code of Regulations Division 4.5.
    c. Dispose of hazardous waste within 90 days of the start of generation. Use a hazardous waste manifest and a transporter registered with the California DTSC to transport hazardous waste to an appropriately permitted Class I Disposal Site.

K. The following Good Site Management Housekeeping is required for erosion control:

1. Provide effective soil cover for inactive areas and all finished slopes, open space, utility backfill, and completed lots:
    a. Provide temporary irrigation equipment for vegetation.

2. Limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, consider the use of plastic materials resistant to solar degradation.

L. The following Good Site Management Housekeeping is required for sediment control:

1. Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site for all projects regardless of the risk level.
2. On sites where sediment basins are to be used, design at minimum, sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

M. Implement appropriate erosion control BMP's (runoff control and soil stabilization) in conjunction with sediment control BMP's for areas under active construction, including:

1. Linear sediment controls along toe to slopes face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths.

Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-25%	20 feet
25-50%	15 feet
Over 50%	10 feet

2. Limiting construction activity traffic to and from the project to entrances and exits that employ effective controls to prevent offsite tracking of sediment.
3. Storm drain protection for all inlets with the potential to receive runoff from areas impacted by construction activities.
4. Perimeter protection.
5. Daily inspections of all immediate access roads with removal of any sediment or other deposited materials prior to any rain event by vacuuming or sweeping.

N. The following Good Site Management Housekeeping is required for run-on and runoff control:

1. All projects shall effectively manage all run-on, all runoff within the site, and all runoff that discharges off the site.
2. Run-on from offsite shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in the CGP.

3.6 TEMPORARY BMP INSTALLATION, OPERATION, AND MAINTENANCE

A. The C-WPCP shall describe and include the specific use of each type of water pollution control BMP as required for adherence to water quality objectives.

B. When a temporary construction entrance or roadway is being used, do not allow soil, sediment, or other debris that is tracked onto the pavement to enter storm drains, open drainage facilities, and watercourses.

C. When material is tracked onto the pavement, remove it within 24 hours unless the District authorizes a longer period.

D. Retain records of street sweeping activities including sweeping times, sweeping locations, and the quantity of disposed sweeping waste.

E. Before installing erosion control measures remove and dispose of trash, debris and weeds in areas to receive erosion control materials.

F. Protect any hardscape, lined drainage channels, and existing vegetation from hydraulically applied material overspray.

G. Proper selection of materials is critical for specific slopes and slope distances. No one product is applicable for all situations. Erosion control products should be selected on a case by case basis.

H. Do not drive vehicles upon erosion control products following placement.

I. Install temporary fencing for the protection of ESA's and the preservation of existing vegetation:

1. If wood posts are used, fasteners shall be staples or nails.
2. If steel posts are used, fasteners shall be tie wires or locking plastic fasteners.
3. Spacing of the fasteners shall be no more than 8 inches apart.
4. Before clearing and grubbing activities.
5. From outside of the protected area.
6. With posts spaced 8 feet apart and embedded at least 16 inches in the soil.
7. Signs shall be attached with the top of the sign panel flush with the top of the high visibility fabric and placed 100 feet apart along the length and at each end of the fence.
8. Install fence to enclose the drip line of foliage canopy of protected plants and protect visible roots from encroachment.

J. Provide a certificate of compliance (certified weed free from the vendor) for temporary straw bales when used as visibility or noise barriers in ESA's.

K. Place gravel-filled bags behind Type K temporary railings if used in an area with run-on.

3.7 MAINTENANCE PRIOR TO FINAL ACCEPTANCE

A. Maintain planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include the filling, leveling, and repairing of any washed or eroded areas, as may be necessary and sufficient watering to maintain the plant materials in a healthy condition.

B. The District may require replanting of any areas in which the establishment of the vegetative ground cover does not appear to be developing satisfactorily.

END OF SECTION 01 57 23

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and “or equal” products.

B. Related Requirements:

1. Section 01 21 00 "Allowances" for products selected under an allowance.
2. Section 01 25 00 "Substitution Procedures" for requests for substitutions.
3. Section 01 42 00 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. “or equal” Product: Product that is demonstrated and approved through the substitution request process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed

to establish significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating “or equal” products of additional manufacturers.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to District.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for District.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCTS NOT ALLOWED

A. Do not provide products that contain asbestos, lead, or coal tar.

2.2 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. District reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. For products specified by name and accompanied by the term "or equal," comply with requirements of Section 01 25 00 “Substitution Procedures” to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Where Specifications name a single manufacture’s product and indicate “no substitution”, provide the named product that complies with requirements. “or equal” products (substitutions) will not be considered.
2. Where Specifications name a single manufacturer or source and indicate “no substitution”, provide a product by the named manufacturer or source that complies with requirements. “or equal” products (substitutions) will not be considered.
3. Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. “or equal” products (substitutions) will be considered.
4. Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. “or equal” products (substitutions) will be considered unless expressly specified otherwise.

5. Basis-of-Design Product: Where Specifications name a product as the basis-of-design product, or refer to a product indicated on Drawings as the basis-of-design product, provide the specified or indicated product. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. “or equal” products (substitutions) will be considered.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select features such as color, gloss, pattern, density, texture from manufacturer's product line.

PART 3 - EXECUTION

3.1 COLOR CONSISTENCY

A. All like finish products within a given visible area shall be from the same dye lot or color run.

B. If like finish products within a given visible area vary slightly in color, mix and blend varying colors to avoid distinct areas of color variation.

END OF SECTION 01 60 00

SECTION 01 73 00
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of District-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Requirements:

1. Section 01 10 00 "Summary" for limits on use of Project site.
2. Section 01 33 00 "Submittal Procedures" for submitting surveys.
3. Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of District-accepted deviations from indicated lines and levels, and final cleaning.
4. Section 02 41 19 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.

1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:

a. Contractor's superintendent.
b. Trade supervisor responsible for cutting operations.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify the District Construction Manager of locations and details of cutting, and await directions from the District Construction Manager before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

a. Primary operational systems and equipment.
b. Fire separation assemblies.
c. Air or smoke barriers.
d. Fire-suppression systems.
e. Plumbing piping systems.
f. Mechanical systems piping and ducts.
g. Control systems.
h. Communication systems.
i. Fire-detection and -alarm systems.
j. Conveying systems.
k. Electrical wiring systems.
l. Operating systems of special construction.
m. Weather barriers.
n. Thermal protection systems, including insulation assemblies.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that

results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include the following:

a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Exterior curtain-wall construction.
d. Sprayed fire-resistive material.
e. Equipment supports.
f. Piping, ductwork, vessels, and equipment.
g. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in the District Construction Manager's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site to District Construction Manager 10 days prior to start of work.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine surfaces, substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and District Construction Manager that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions

outside the control of Contractor, submit a request for information to Architect according to requirements in Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify the District Construction Manager promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify the District Construction Manager when deviations from required lines and levels exceed allowable tolerances.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and project Inspector.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, survey monuments, temporary control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and survey monuments during construction operations.

1. If any existing permanent benchmark will be destroyed as a result of construction, notify District Construction Manager in writing before such destruction occurs. Do not disturb benchmark until City forces have established

necessary control to set a new permanent benchmark and District Construction Manager has given written permission to proceed.

2. If any survey monument will be destroyed as a result of construction, before such destruction occurs, notify District Construction Manager in writing. Engage a Land Surveyor to survey as necessary and prepare Pre-construction Corner Record complying with the California Professional Land Surveyors Act. Section 8771. File Pre-construction Corner Record with San Diego County Surveyor. Send a copy of preliminary Corner Record to District Construction Manager. Do not disturb survey monument until Pre-construction Corner Record is received and accepted by County and written permission is obtained from District Construction Manager. After lost monument has been replaced, engage a Land Surveyor to file a final Corner Record (or a Record of Survey if required) with San Diego County Surveyor.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately

located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the District Construction Manager.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use only products, cleaners, and installation materials that are not considered hazardous.

K. Underground Detectable Warning Tapes: Ensure that completed work provides fully functional underground detectable warning tapes per requirements specified in other Sections.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces and assemblies to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials, assemblies, and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping.
2. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Cut or form holes for penetrations accurately to allow for proper sealing. Temporarily cover openings when not in use.
3. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
4. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
5. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
6. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
7. Proceed with patching after construction operations requiring cutting are complete.

H. Notify District Construction Manager 48 hours prior to closing openings. Allow Inspector to view conditions prior to closing.

I. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance. Replace ceiling tiles damaged by cutting and patching work.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

J. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 DISTRICT-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for District's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by District's construction personnel.

1. Construction Schedule: Inform District of Contractor's preferred construction schedule for District's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify District if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include District's construction personnel at preinstallation conferences covering portions of the Work that are to receive District's work. Attend preinstallation conferences conducted by District's construction personnel if portions of the Work depend on District's construction.

3.8 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 74 19 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.10 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.11 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous **demolition and construction** waste.
2. Recycling nonhazardous **demolition and construction** waste.
3. Disposing of nonhazardous **demolition and construction** waste.

B. Related Requirements:
1. Section 02 41 19 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.
2. Section 31 10 00 "Site Clearing" for disposition of waste resulting from site clearing and removal of above - and below-grade improvements.

1.3 DEFINITIONS

A. Source Separated Recycling Facility (SSRF): A facility that exclusively accepts separated individual commodities for the purpose of recycling; such as metals, paper, wood, and/or inerts such as asphalt and concrete.

B. Mixed Debris: Includes solid items such as building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations. One mixed debris processing facility is located in San Diego County at EDCO, 6670 Federal Blvd, Lemon Grove, CA 91945, herein referred to as the EDCO Mixed Debris Recycling Facility.

C. Class III Landfill: A landfill that accepts non-hazardous waste such as household, commercial, and industrial waste.

D. Administrative Recycling Program: Separation and recovery of paper and beverage containers from both permanent administrative offices and construction site office(s).

E. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

F. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

G. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

H. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

I. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

J. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Clearly label all recycling containers and list acceptable and unacceptable materials. Deliver recyclable materials to source separated recycling facilities. Facilitate recycling and salvage of materials, including the following as applicable:

1. Demolition Waste:

a. Asphalt paving.
b. Concrete.
c. Concrete reinforcing steel.
d. Brick.
e. Concrete masonry units.
f. Wood studs.
g. Wood joists.
h. Plywood and oriented strand board.
i. Wood paneling.
j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.

q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.
ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.
oo. Transformers.
pp.

2. Construction Waste:

a. Masonry and CMU.
b. Lumber.
c. Wood sheet materials.
d. Wood trim.
e. Metals.
f. Roofing.
g. Insulation.
h. Carpet and pad.
i. Gypsum board.
j. Piping.
k. Electrical conduit.
l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.

6) Wood crates.
7) Plastic pails.

B. Co-mingled Debris: Direct all co-mingled site tonnage to the EDCO Mixed Debris Processing Facility.

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 10 days of date established for the Notice to Proceed.

1.6 INFORMATIONAL SUBMITTALS

A. SDUSD Contractor Summary Site Debris Diversion Report: Concurrent with each Application for Payment, submit report. Use District Form CSDDR-1, attached at the end of this Section. The District Construction Manager will provide an editable version. *Failure to include Report will result in a 10 percent withholding of payment.*

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Qualification Data: For Waste Management Coordinator.

H. Disposal Manifests:

1. Original manifests and receipts acknowledging disposal of all hazardous and non-hazardous waste material from the project showing delivery date, quantity, and appropriate signature of landfill's authorized representative.

a. Submit within 30 days of date that material was transported off site.

1.7 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Waste Management Conference: Prior to commencement of work, conduct conference at Project site. Attendees shall include District Construction Manager, Waste Management Coordinator, and Contractor personnel involved in demolition and waste handling. Review methods and procedures related to waste management, including:

1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 SITE DEBRIS MANAGEMENT PLAN

A. General: Develop a site debris management plan. Use District Form CSDMP-1, attached at the end of this Section. The District Construction Manager will provide an editable version. Use a separate form for each project phase (land clearing, demolition, construction).

B. Post approved plan in a prominent location at the Project site and distribute copies to superintendent and all subcontractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management

work plan.Coordinator shall be present at the Project site full time during land clearing and demolition phases, and part time as needed during construction phase.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 01 50 00 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 FORMS

A. See following pages.

FORM CSDMP-1
SDUSD CONTRACTOR SITE DEBRIS MANAGEMENT PLAN (CSDMP)

Complete a separate form for each project phase (i.e. demolition, land clearing, construction)

Project Title:		
Contract or Work Order No.:		
Contractor's Name:		
Street Address:		
City:	State:	Zip:
Phone: ( )	Fax: ( )	
E-Mail Address:		
Prepared by: (Print Name)		
Date Submitted:		

Reuse, Recycling or Mixed Debris Processing Processes Used

Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that are estimated for reuse and recycling below:

01 - Reuse of building materials or salvage items on site (i.e. fencing or red clay brick)
02 - Salvaging building materials or salvage items at an offsite salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an offsite recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at EDCO Mixed Debris Recycling Facility
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
09 - Other (please describe) _____

Types of Material Generated

Use these codes to indicate the types of material that are estimated to be generated on the project

A = Asphalt	C = Concrete	1. M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)
Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period
Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units). Provide weight slips or load tickets for each load delivered.

SECTION I - RE-USED/RECYCLED MATERIALS

Include all proposed recycling activities for source separated recycling centers.

Type of Material	**Type of Activity**	**Facilities Used/ Location**	**Total Truck Loads**	**Total Quantities**		
				Tons	**Cubic YD**	**Other Wt.**
(ex.) M	04	ABC Metals, National City	24	355		
a. Source Separated Diversion			0	0	0	0

FORM CSDMP-1 (Continued)
SDUSD CONTRACTOR SITE DEBRIS MANAGEMENT PLAN (CSDMP)

SECTION II - MIXED DEBRIS PROCESSING MATERIALS

Include estimates of all debris generated from activities where no source separated recycling will occur.

Type of Material	Type of Activity	Facilities Used/ Location	Total Truck Loads	2. Total Quantities		
				Tons	Cubic YD	Other Wt.
(ex.) M/C	5	EDCO Mixed Debris Recycling Facility	2	35		

SECTION III - TOTAL MATERIALS GENERATED EDCO

This section calculates the total materials recycled verses the total materials disposed for mixed debris sent to EDCO

	Tons Recycled (tons x 0.80)	*Tons Disposed (tons x 0.20)*
a. EDCO		

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION

Add totals from Section I + Section II +Section III

	Tons	Cubic Yards	Other Wt.
a. Materials Re-Used and Recycled (Section I + II +III)			
3. b. EDCO Disposal (Section III)			
c. Total Materials Generated (a. + b. = c.)			
d. Landfill Diversion Rate (a/c = d Tons Only)*			

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments *(Provide any additional information pertinent to planned reuse, recycling, or disposal activities):*

Notes:

1. EDCO will recover 80% of the mixed debris for the purposes of recycling. Therefore, multiply tonnage by 0.80 for tons recycled and multiply tonnage by 0.20 for total project disposal.
2. Suggested Conversion Factors: From Cubic Yards to Tons
   - Asphalt: 0.61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   - Concrete: 0.93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   - Ferrous Metals: 0.22 (ex. 1000 CY Ferrous Metal = 220 tons)
   - Non-Ferrous Metals: 0.10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   - Drywall Scrap: 0.20
   - Wood Scrap: 0.16

Section B: Plan Narrative -- Methods to Ensure Diversion

Describe the method to be used to reuse and recycle (methods shall include one or more of the following: deconstruction to salvage all or most materials generated, selective salvage with source separation, and/or reuse of materials onsite):

Describe methods to be used to provide onsite instruction regarding appropriate separation, handling, recycling, salvage, reuse and return methods to achieve waste reduction goals.

Describe methods to be used to protect materials to be recycled from contamination. Including schedule of regular clean-up, schedule visual inspections of dumpsters and recycling bins to identify potential contamination of materials.

How will materials be stored and how much space will be required?

Describe your administrative recycling program.

FORM CSDDR-1
SDUSD CONTRACTOR SUMMARY SITE DEBRIS DIVERSION REPORT (CSDDR)

(Submit With Each Progress Payment)

Project Title:				
Contract or Work Order No.:				
Contractor's Name:				
Street Address:				
City:			State:	Zip:
Phone: ( )			Fax: ( )	
E-Mail Address:				
Prepared by: (Print Name)				
Date Submitted:				
Period Covered:		From:	To:	

Reuse, Recycling or Mixed Debris Processing Processes Used

Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that were recycled or disposed in the sections below:

01 - Reuse of building materials or salvage items on site (i.e. fencing or red clay brick)
02 - Salvaging building materials or salvage items at an offsite salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an offsite recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at EDCO Mixed Debris Recycling Facility
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
09 - Other (please describe) _____

Types of Material Generated

Use these codes to indicate the types of material that were generated on the project

A = Asphalt	C = Concrete	M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)
Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period
Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units). Provide weight slips or load tickets for each load delivered.

SECTION I - RE-USED/RECYCLED MATERIALS

Include all recycling activities for source separated recycling centers where recycling occurred.

Type of Material	**Type of Activity**	**Facilities Used/ Location**	**Total Truck Loads**	**Total Quantities**		
				Tons	**Cubic YD**	**Other Wt.**
(ex.) M	04	ABC Metals, National City	24	355		
a. Source Separated Diversion			0	0	0	0

FORM CSDDR-1 (Continued)
SDUSD CONTRACTOR SUMMARY SITE DEBRIS DIVERSION REPORT (CSDDR)

SECTION II - MIXED DEBRIS PROCESSING MATERIALS

Include all debris generating activities for materials that were not send to source separated recycling facilities.

Type of Material	Type of Activity	Facilities Used/Location	Total Truck Loads	Total Quantities		
				Tons	Cubic YD	Other Wt.
(ex.) M/C	05	EDCO Mixed Debris Recycling Facility	2	35		

SECTION III - TOTAL MATERIALS GENERATED EDCO

This section calculates the total materials recycled verses the total materials disposed for mixed debris sent to EDCO

	Tons Recycled (tons x 0.80)	*Tons Disposed (tons x 0.20)*	
a. EDCO			

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION

Add totals from Section I + Section II

	Tons	Cubic YD	Other Wt.
a. Materials Re-Used and Recycled (Section I + II +III)	0		
b. EDCO Disposal (Section III)	0		
c. Total Materials Generated (a. + b. = c.)	0		
d. Landfill Diversion Rate (a/c = d Tons Only)*			

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments *(Provide any additional information pertinent to planned reuse, recycling, or disposal activities):*

Notes:

4. EDCO will recover 80% of the mixed debris for the purposes of recycling. Therefore, multiply tonnage by 0.80 for tons recycled and multiply tonnage by 0.20 for total project disposal.
5. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)
   Asphalt: 0.61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   Concrete: 0.93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   Ferrous Metals: 0.22 (ex. 1000 CY Ferrous Metal = 220 tons)
   Non-Ferrous Metals: 0.10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   Drywall Scrap: 0.20
   Wood Scrap: 0.16

END OF SECTION 01 74 19

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including:

1. Substantial Completion procedures.
2. Final completion procedures.
3. List of Incomplete Items.
4. Warranties.
5. Final cleaning.
6. Repair of the Work.

B. Related Requirements:
1. Section 01 73 00 "Execution" for progress cleaning of Project site.
2. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
3. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Submittals Prior to Substantial Completion: Complete the following prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit testing, adjusting, and balancing records.
5. Submit changeover information related to District's occupancy, use, operation, and maintenance.

B. Procedures Prior to Substantial Completion: Complete the following prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise District that site is ready for final changeover of permanent locks. District will make final changeover.
2. Complete startup and testing of systems and equipment.
3. Perform preventive maintenance on equipment used prior to Substantial Completion.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements.

6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

C. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of seven days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Project Inspector will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list). Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   a. Certified:
      1) Signed and dated by person with authority to represent Contractor.
      2) Subsequent to 1) above, signed and dated by person with authority to represent Architect.
2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
3.
4. Instruct District's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of seven days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Project Inspector will either proceed with inspection or notify Contractor of unfulfilled requirements.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit List of Incomplete items in the following format:
    a. MS Excel electronic file.
    b. PDF electronic file.
    c. Three paper copies.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with San Diego Air Pollution Control District allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved, to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Sweep concrete floors broom clean in unoccupied spaces.

h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
j. Remove labels that are not permanent.
k. Wipe surfaces of mechanical and electrical equipmentand similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
l. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION 01 77 00

SECTION 01 78 23
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manual.
2. Systems and equipment operation manuals.
3. Systems and equipment maintenance manuals.
4. Product maintenance manuals.

B. Related Requirements:

1. Section 01 33 00 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

C. Delivery Media: Submit operation and maintenance manuals to District Construction Manager in the following media:

1. Submit on digital media acceptable to District Construction Manager. Enable reviewer comments on draft submittals.
2. Submit one paper copy.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 COMMON REQUIREMENTS FOR OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of District.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for District Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

F. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

G. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by District's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.

2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Precautions against improper use.
9. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by District's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

1.9 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.

2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:
1. Section 01 77 00 "Closeout Procedures" for general closeout procedures.
2. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Submit one electronic copy of marked-up record prints.

B. Record Specifications: Submit one electronic copy of marked-up record specifications, including addenda and contract modifications.

C. Record Product Data: Submit one electronic copy of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued, depicting the current status of the Work.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Locations of concealed internal utilities.
    i. Changes made by Change Order, Construction Change Directive, or Field Work Order.
    j. Changes made following Architect's written orders.
    k. Details not on the original Contract Drawings.
    l. Field records for variable and concealed conditions.
    m. Record information on the Work that is shown only schematically.
    n. Changes made by responses to Requests for Information (RFI’s).

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, allowances applied, and similar identification, where applicable.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders where applicable.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Note related Change Orders where applicable.

1.7 RECORDING AND MAINTENANCE

A. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's, Project Inspector’s, and District Construction Manager's reference during normal working hours.

B. Review Record Documents weekly with Project Inspector. Indicate to Project Inspector the items incorporated in Project Record Documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing District's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

B. Related Requirements:

1. Divisions 2 through 33 Sections for specific requirements for demonstration and training of products and systems in those Sections.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name and address of videographer.
c. Name of Architect.
d. Name of District Construction Manager.
e. Name of Contractor.
f. Names of Contractor Construction Manager, Project Manager, and Superintendent.
g. Date of video recording.

2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
3. At completion of training, submit complete training manual(s) for District's use in PDF electronic file format.

1.5 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative experienced in operation and maintenance procedures and training.

1.6 COORDINATION

A. Coordinate instruction schedule with District's operations. Adjust schedule as required to minimize disrupting District's operations and to ensure availability of District's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed by Architect.

1.7 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project record documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.

c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.8 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.9 INSTRUCTION

A. Engage qualified instructors to instruct District's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. District will furnish a representative to describe District's operational philosophy.
2. District will furnish Contractor with names and positions of participants.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide instruction addressing seasonal operations variations.

1. Schedule training with District, through District Construction Manager, with at least seven days' advance notice.

C. Training Location: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. When necessary, provide classroom training.

1. Webinar training is not acceptable.

D. Reference Material: Conduct training using final operation and maintenance data submittals.

E. Cleanup: Collect used and leftover educational materials and give to District. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.10 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, color digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.

1. Submit video recordings on thumb drive.
2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.

4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training thumb drive that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:

    a. Name of Contractor/Installer.
    b. Business address.
    c. Business phone number.
    d. Point of contact.
    e. E-mail address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

    a. Produce segments to present a single significant piece of equipment per segment.
    b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.

1. Furnish additional portable lighting as required.

E. Narration: Describe scenes on video recording by audio narration. Include description of items being viewed.

F. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 79 00

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Demolition and removal of selected portions of exterior or interior of building or structure and site elements.
2. Removal and salvage of existing items for delivery to District and removal of existing items for reinstallation.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 013201 "Construction Progress Documentation."
3. Section 013233 "Photographic Documentation" for preconstruction photographs taken before demolition.
4. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental protection measures for selective demolition operations.
5. Section 017300 "Execution" for cutting and patching procedures.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner as indicated.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage; prepare for reuse; and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items

of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to District.

1.4 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with District's operations.

1.5 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure District's on-site operations are uninterrupted.
2. Temporary interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Coordination of District's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
5. Means of protection for items to remain and items in path of waste removal from building.

B. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

1.6 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 FIELD CONDITIONS

A. The District will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so District's operations will not be disrupted.

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

C. Notify the District Construction Manager of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials:

1. It is not expected that hazardous materials will be encountered in the Work.

a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the District Construction Manager. Hazardous materials will be removed in accordance with Specification Sections 028233, 028333, and 028433. The costs associated with such work shall be paid out of the appropriate Allowance, as approved by the District Construction Manager.

E. Termite Infestation: It is not expected that active termite infestations will be encourted in the Work.

F. On-site sale of removed items or materials is not permitted.

G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:

1. <**Insert warranted system**>.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by the District. The District does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video, measured drawings. Comply with Section 013233 "Photographic Documentation."

1. Inventory and record the condition of items to be removed for salvage or reinstallation. Photograph or video conditions that might be misconstrued as damage caused by removal.

3.2 PREPARATION

A. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

B. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

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

3.3 UTILITY SERVICES AND BUILDING SYSTEMS

A. Existing Services/Systems to Remain: Maintain utilities and building systems and equipment to remain and protect against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utilities and building systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated utilities when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If disconnection of utilities and building systems will affect adjacent occupied parts of the building, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to those parts of the building.
4. Demolish and remove existing building systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment and components.

5. Abandon existing building systems, equipment, and components indicated on Drawings to be abandoned in place.

    a. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    b. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

6. Remove and reinstall/salvage existing building systems, equipment, and components indicated on drawings to be removed and reinstalled or removed and salvaged:

    a. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment and components; when appropriate, reinstall, reconnect, and make equipment operational.
    b. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and components and deliver to Owner.

3.4 SALVAGE/REINSTALL

A. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area [**on-site**][**off-site**][**designated by Owner**][**indicated on Drawings**].

5. Protect items from damage during transport and storage.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least <**Insert number**> hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water

when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Work in Historic Areas: Selective demolition may be performed only in areas of Project that are not designated as historic. In historic spaces, areas, and rooms, or on historic surfaces, the terms "demolish" or "remove" to mean historic "removal" or "dismantling" as specified in Section 024296 "Historic Removal and Dismantling."

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete:

1. Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least **3/4 inch** at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
2. Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 09 24 00 - CEMENT PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal lath.
2. Accessories.
3. Base-coat cement plaster.
4. Cement plaster finish coats.

1.2 ACTION SUBMITTALS

A. Product Data:

1. For each type of product.

1.3 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.4 FIELD CONDITIONS

A. Comply with ASTM C926 requirements.

B. Exterior Plasterwork:

1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
2. Apply plaster when ambient temperature is greater than 40 deg F.
3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.

C. Factory-Prepared Finish Coats: Comply with manufacturer's written instructions for environmental conditions for applying finish coats.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated on Drawings, provide cement plaster assemblies identical to those of assemblies tested for fire resistance in accordance with ASTM E119 by a qualified testing agency.

2.2 METAL LATH

A. Wire-Fabric Lath:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. ClarkDietrich
    b. Davis Wire; a Heico Wire Group company
    c. Structa Wire Corp.

2. Welded-Wire Lath: ASTM C933; self-furring, 1.14 lb/sq. yd..
3. Woven-Wire Lath: ASTM C1032; self-furring, with stiffener wires, 1.4 lb/sq. yd., with 1.5-inch openings, and woven from 0.051-inch diameter wire.
4. Water-Resistive Barrier: Vapor-permeable paper, factory bonded to back of lath; complying with requirements in FS UU-B-790a for Type I, Grade D and with 60-minute water resistance.

    a. Provide water-resistive barrier at exterior locations.

2.3 ACCESSORIES

A. General: Comply with requirements in ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

2.4 BASE-COAT CEMENT PLASTER

A. General: Comply with requirements in ASTM C926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland Cement Mixes:

    a. Scratch Coat: For cementitious material, mix 1 part portland cement and 0

to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.

b. Brown Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.

2.5 CEMENT PLASTER FINISH COATS

A. Ready-Mixed Finish-Coat Plaster: Mill-mixed Portland cement, aggregates, coloring agents, and proprietary ingredients.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Omega Products International.
b. LaHabra Stucco Solutions; Parax USA.
c. Merlex Stucco.
d. Or Equal.

2. Color: As selected by Architect from manufacturer's full range.

2.6 PLASTER MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I.

1. Color for Finish Coats: Match existing.

B. Colorants for Job-Mixed Finish Coats: Colorfast mineral pigments that produce finish plaster color to match Architect's sample.

C. Lime: ASTM C206, Type S; or ASTM C207, Type S.

D. Sand Aggregate: ASTM C897.

2.7 MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in cement plaster.

C. Bonding Compound: ASTM C932.

D. Fasteners for Attaching Metal Lath to Substrates: ASTM C 1861.

E. Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter unless otherwise indicated.

F. Steel drill screws complying with ASTM C 1002 for fastening metal lath to wood or steel members less than 0.033-inch thick.

G. Steel drill screws complying with ASTM C 954 for fastening metal lath to steel members 0.033- to 0.11-inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare smooth, solid substrates for plaster in accordance with ASTM C926.

3.3 INSTALLATION, GENERAL

A. Fire-Resistance-Rated Assemblies: Install components in accordance with requirements for design designations from listing organization and publication indicated on Drawings.

B. Sound-Attenuation Blankets: Where indicated on Drawings, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

3.4 INSTALLATION OF METAL LATH

A. Metal Lath: Install in accordance with ASTM C1063.

1. Partition Framing and Vertical Furring: Install welded-wire lath.
2. Flat-Ceiling and Horizontal Framing: Install woven-wire lath.

3.5 APPLICATION OF BASE-COAT CEMENT PLASTER

A. General: Comply with ASTM C926.

1. Install so that finished plaster surfaces will not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane when measured by a 10-ft. straightedge

placed on surface.
2. Install so finished plaster surfaces will be flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets.

B. Bonding Compound: Apply on [unit masonry][and][concrete] substrates for direct application of plaster.

C. Wall/Vertical Base Coats:

1. Three-Coat Plasterwork Over Metal Lath: Install base-coat mixes for use over metal lath to produce scratch and brown coats having 3/4-inch total thickness.
2. Two-Coat Plasterwork Over Solid Plaster Bases: Install base-coat mix for use over solid plaster bases in [3/8-inch thickness on masonry][1/4-inch thickness on concrete].

D. Ceiling/Horizontal Base Coats:

1. Three-Coat Plasterwork Over Metal Lath: Install base-coat mixes for use over metal lath to produce scratch and brown coats with [1/2-inch total thickness][3/4-inch total thickness for metal lath on concrete].
2. Two-Coat Plasterwork Over Solid Plaster Bases: Install base-coat mix for use over solid plaster bases in 1/4-inch thickness on concrete.

3.6 APPLICATION OF CEMENT PLASTER FINISH COATS

A. General: Comply with ASTM C926.

1. Do not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane in finished plaster surfaces when measured by a 10-ft. straightedge placed on surface.
2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, groove finish coat at junctures with metal.
3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Plaster Finish Coats: Apply to provide finish to match existing plaster finish.

3.7 REPAIR

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.8 CLEANING

A. Remove temporary protection and enclosure of other work after plastering is complete.

B. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered.

C. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 09 24 00

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C840 requirements or manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, or mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings in accordance with ASTM E119; tested by a qualified testing agency.

2.3 GYPSUM BOARD, GENERAL

A. Size: Provide panel products in maximum lengths and widths available that will minimize joints in each area and that correspond with support system specified or indicated on Drawings.

2.4 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C1396/C1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Georgia-Pacific Gypsum LLC
    b. Gold Bond Building Products, LLC provided by National Gypsum Company
    c. USG Corporation
    d. Or Equal.

2. Thickness: As indicated on Drawings.
3. Long Edges: Tapered.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.

1. Material: Galvanized-steel sheet or aluminum-coated steel sheet or rolled zinc.
2. Shapes:

    a. Cornerbead.
    b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    c. L-Bead: L-shaped; exposed long flange receives joint compound.
    d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    e. Expansion (control) joint.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M requirements.

1. Mold-Resistant Joint Compound: Use mold-resistant formulations with mold-resistant panel products.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.7 AUXILIARY MATERIALS

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C1002 unless otherwise specified or indicated on Drawings.

1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

C. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers as follows:

1. Non-Fire-Resistance-Rated Assemblies: Glass.
2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.

D. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

E. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

A. Comply with ASTM C840 requirements.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations.

Comply with ASTM C919 requirements and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

K. Install sound-attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Gypsum Wallboard: As indicated on Drawings.
2. Gypsum Ceiling Board: Ceiling surfaces.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated on Drawings.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise specified or indicated on Drawings or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally unless otherwise indicated on Drawings or required by fire-resistance-rated assembly.

3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated on Drawings or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over studs or furring members and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated on Drawings or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports

with screws.

3.4 INSTALLATION OF TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim in accordance with manufacturer's written instructions.

B. Control Joints: Install control joints in accordance with ASTM C840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Install at outside corners.
2. LC-Bead: Install at exposed panel edges.
3. L-Bead: Install where indicated on Drawings.

3.5 APPLICATION OF JOINT TREATMENT MATERIALS

A. Finishing Panel Products: Treat joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare panel surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over panel joints, except for trim products specifically indicated as not intended to receive tape.

D. Interior Gypsum Board: Finish panels to levels indicated below and in accordance with ASTM C840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Where indicated on Drawings.
3. Level 3: .

    a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

    a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

E. Exterior Gypsum Board for Ceilings and Soffits: Finish in accordance with manufacturer's written instructions.

F. Glass-Mat Faced Panels: Finish in accordance with manufacturer's written instructions.

G. Cementitious Backer Units: Finish in accordance with manufacturer's written instructions.

3.6 PROTECTION

A. Protect adjacent surfaces from joint compound and promptly remove from floors and other non-gypsum board surfaces. Repair surfaces stained, marred, or otherwise damaged during gypsum board installation and finishing.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 29 00

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copper building wire.
2. Fire-alarm wire and cable.
3. Connectors and splices.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less. Aluminum conductors are not acceptable.

B. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

D. Conductor Insulation:

1. Type NM. Comply with UL 83 and UL 719.
2. Type THHN and Type THWN-2. Comply with UL 83.
3. Type THW and Type THW-2. Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
4. Type XHHW-2. Comply with UL 44.

SPECIFICATIONS

2.2 FIRE-ALARM WIRE AND CABLE

A. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.

B. Signaling Line Circuits: Twisted, shielded pair, not less than No. 14 AWG size as recommended by system manufacturer.

2.3 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

C. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.
2. Type: One hole with standard barrels.
3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Branch Circuits:

1. Copper:

a. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533.13 "Conduits for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.3 INSTALLATION OF FIRE-ALARM WIRE AND CABLE

A. Comply with NFPA 72.

B. Wiring Method: Install wiring in metal pathway according to Section 280528 "Pathways for Electronic Safety and Security."

1. Fire-alarm circuits and equipment control wiring associated with fire-alarm system must be installed in a dedicated pathway system.

a. Cables and pathways used for fire-alarm circuits, and equipment control wiring associated with fire-alarm system, may not contain any other wire or cable.

C. Color-Coding: Color-code fire-alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire-alarm system junction boxes and covers red.

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material[and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors].

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

3.6 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

END OF SECTION 260519

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Grounding and bonding conductors.
2. Grounding and bonding clamps.
3. Grounding and bonding bushings.
4. Grounding and bonding hubs.
5. Grounding and bonding connectors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 GROUNDING AND BONDING CONDUCTORS

A. Equipment Grounding Conductor:

1. Standard Features: 600 V, **THHN/THWN-2 or THWN-2**, **copper** wire, green color, in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

2.3 GROUNDING AND BONDING CLAMPS

A. Description: Clamps suitable for attachment of grounding and bonding conductors to grounding electrodes, pipes, tubing, and rebar. Grounding and bonding clamps specified in this article are also suitable for use with communications applications.

2.4 GROUNDING AND BONDING BUSHINGS

A. Description: Bonding bushings connect conduit fittings, tubing fittings, threaded metal conduit, and unthreaded metal conduit to metal boxes and equipment enclosures, and have one or more bonding screws intended to provide electrical continuity between bushing and enclosure. Grounding bushings have provision for connection of bonding or grounding conductor and may or may not also have bonding screws.

PART 3 - EXECUTION

3.1 SELECTION OF GROUNDING AND BONDING PRODUCTS

A. Grounding and Bonding Connectors:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

3.2 INSTALLATION OF GROUNDING AND BONDING

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
2. Electrical Maintenance: NFPA 70B.
3. Electrical Safety: NFPA 70E.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
5. Communications Work: BICSI N1.

END OF SECTION 260526

SECTION 26 05 33.13
CONDUITS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type EMT duct raceways and elbows.
2. Type ENT duct raceways and fittings.
3. Type HDPE and Type EPEC duct raceways and fittings.
4. Type ERMC duct raceways, elbows, couplings, and nipples.
5. Type FMC duct raceways.
6. Type FMT duct raceways.
7. Type LFMC duct raceways.
8. Type PVC duct raceways and fittings.
9. Fittings for conduit, tubing, and cable.
10. Joint compounds.
11. Solvent cements.

B. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" specifies nonmetallic underground conduit with conductors (Type NUCC).
2. Section 260543 "Underground Ducts and Raceways for Electrical Systems" specifies exterior duct banks, manholes, and underground utility construction.
3. Section 260553 "Identification for Electrical Systems" specifies electrical equipment labels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 TYPE EMT DUCT RACEWAYS AND ELBOWS

A. UL FJMX - Steel Electrical Metal Tubing (EMT-S) and Elbows:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN FJMX; including UL 797.

2. Standard Features:

a. Material: Steel.
b. Exterior Coating: **Zinc**.
c. Interior Coating: **Zinc with organic top coating**.
d. Minimum Trade Size: **trade size ¾"**.

2.3 TYPE FMC DUCT RACEWAYS

A. UL DXUZ - Steel Flexible Metal Conduit (FMC-S):

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN DXUZ; including UL 1.

2. Standard Features:

a. Material: Steel.
b. Minimum Trade Size: [**trade size ¾"**.

3. Other Available Features Required by the Project:

2.4 TYPE PVC DUCT RACEWAYS AND FITTINGS

A. UL DZYR - Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN DZYR; including UL 651.

2. Standard Features:

a. Dimensional Specifications: Schedule 40.
b. Minimum Trade Size: **trade size ¾"**.

B. UL FKAV - Fittings for Type EMT Duct Raceways:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. UL CCN FKAV; including UL 514B.

2. Standard Features:

    a. Material: **Steel**.
    b. Coupling Method: **Compression coupling**
    c. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

C. UL ILNR - Fittings for Type FMC Duct Raceways:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. UL CCN ILNR; including UL 514B.

PART 3 - EXECUTION

3.1 SELECTION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturer's published instructions, comply with NFPA 70 for selection of duct raceways. Consult Architect for resolution of conflicting requirements.

B. Outdoors:

1. Exposed and Subject to Severe Physical Damage: **ERMC**.
2. Concealed Aboveground: **EMT**.
3. Direct Buried: **PVC-40**.

C. Indoors:
1. Concealed in Ceilings and Interior Walls and Partitions: **EMT**.
2. Damp or Wet Locations: **ERMC**.

3.2 INSTALLATION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturer's published instructions, comply with the following:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.

2. Electrical Safety: NFPA 70E.
3. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
5. Type EMT-S: Article 358 of NFPA 70 and NECA NEIS 101.
6. Type LFMC: Article 350 of NFPA 70 and NECA NEIS 101.
7. Type LFNC: Article 342 of NFPA 70 and NECA NEIS 111.
8. Type PVC: Article 356 of NFPA 70 and NECA NEIS 111.
9. Consult Architect for resolution of conflicting requirements.

C. Special Installation Techniques:

1. General Requirements for Installation of Duct Raceways:

a. Complete duct raceway installation before starting conductor installation.
b. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft (0.6 m) above finished floor.
c. Make bends in duct raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
d. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
e. Support conduit within 12 inch of enclosures to which attached.
f. Install duct sealing fittings at accessible locations in accordance with NFPA 70 and fill them with listed sealing compound. For concealed duct raceways, install fitting in flush steel box with blank cover plate having finish similar to that of adjacent plates or surfaces. Install duct sealing fittings in accordance with NFPA 70.
g. Install devices to seal duct raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of duct raceways at the following points:

1) Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2) Where an underground service duct raceway enters a building or structure.
3) Conduit extending from interior to exterior of building.
4) Conduit extending into pressurized duct raceway and equipment.
5) Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
6) Where otherwise required by NFPA 70.

h. Install duct raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.

1) Termination fittings with shoulders do not require two locknuts.

i. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to trade size 1-1/4" and insulated throat metal bushings on trade size 1-1/2" and larger conduits terminated with locknuts.

2. Duct Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.

   a. ERMC-S-PVC: Provide only fittings listed for use with this type of conduit. Patch and seal joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Provide sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
   b. EMT: Provide **setscrew** fittings. Comply with NEMA FB 2.10.
   c. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.

3. Duct Raceways Penetrating Rooms or Walls with Acoustical Requirements: Seal duct raceway openings on both sides of rooms or walls with acoustically rated putty **or firestopping**.
4. Identification: Provide labels for conduit assemblies, duct raceways, and associated electrical equipment.

D. Interfaces with Other Work:

1. Firestop penetrations of fire-rated floor and wall assemblies.
2. Provide conduit hangers and supports.

3.3 CLEANING

A. Verify that bentonite or other drilling fluids are contained and removed, and site is restored to its original or improved condition.

3.4 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533.13

SECTION 26 05 33.16
BOXES AND COVERS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Nonmetallic outlet boxes, device boxes, rings, and covers.
3. Junction boxes and pull boxes.
4. Cover plates for device boxes.

B. Related Requirements:

1. Section 260526 "Grounding and Bonding for Electrical Systems" specifies grounding and bonding referenced by this Section.
2. Section 260553 "Identification for Electrical Systems" specifies electrical equipment labels and warning signs installed by this Section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

A. UL QCIT - Metallic Outlet Boxes and Covers:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

   a. UL CCN QCIT; including UL 514A.

2. Standard Features:

a. Box having pryout openings, knockouts, threaded entries, or hubs in either the sides or the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
b. Material: **Sheet steel**.

B. UL QCIT - Metallic Device Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN QCIT; including UL 514A.

2. Standard Features:

a. Box with provisions for mounting wiring device directly to box.
b. Material: **Sheet steel**.

2.3 JUNCTION BOXES AND PULL BOXES

A. UL BGUZ - Indoor Sheet Metal Junction and Pull Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN BGUZ; including UL 50 and UL 50E.

2. Standard Features:

a. Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

B. UL BGUZ - Outdoor Cast-Metal Junction and Pull Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN BGUZ; including UL 50 and UL 50E.

2. Standard Features:

a. Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
b. Degree of Protection: **Type 3R**.

2.4 COVER PLATES FOR DEVICE BOXES

A. UL QCIT or QCMZ - Metallic Cover Plates for Device Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN QCIT or UL CCN QCMZ; including UL 514D.

2. Standard Features:

a. Cover plate-Securing Screws: Metal with head color to match cover plate finish.
b. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
c. Cover Plate Material: **0.032 inch thick, Type 302/304 non-magnetic stainless steel with brushed finish**.

PART 3 - EXECUTION

3.1 SELECTION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.

B. Degree of Protection:

1. Outdoors:

a. **Type 3R** unless otherwise indicated.

2. Indoors:

a. Type 1 unless otherwise indicated.

3.2 INSTALLATION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.

2. Electrical Safety: NFPA 70E.
3. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.

3.3 FIELD QUALITY CONTROL OF BOXES AND COVERS

A. Administrant for Fire-Alarm Tests and Inspections:
   1. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.

B. Nonconforming Work:

   1. Boxes and covers will be considered defective if they do not pass tests and inspections.
   2. Remove and replace defective units and retest.

C. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

3.4 CLEANING

A. Remove construction dust and debris from boxes before installing cover plates, covers, and hoods.

3.5 PROTECTION

A. After installation, protect boxes from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 260533.16

SECTION 26 05 43
UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type PVC raceways and fittings.
2. Solvent cements.
3. Duct accessories.
4. Handholes and boxes for exterior underground wiring.
5. Manholes for exterior underground wiring.
6. Utility structure accessories.
7. Duct sealing.

B. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" specifies nonmetallic underground conduit with conductors (Type NUCC).
2. Section 260553 "Identification for Electrical Systems" specifies underground-line warning tape and concrete cable routing markers (warning planks).

PART 2 - PRODUCTS

2.1 TYPE PVC RACEWAYS AND FITTINGS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 651 and UL CCN DZYR.

B. Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:

1. Dimensional Specifications: Schedule 40.
2. Options:

a. Minimum Trade Size: **trade size ¾”**.

2.2 FITTINGS FOR CONDUIT, TUBING, AND CABLE

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

B. Metallic Fittings for Type PVC, Raceways:

1. General Characteristics: UL 514B and UL CCN DWTT.

2.3 SOLVENT CEMENTS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: As recommended by conduit manufacturer in accordance with UL 514B and UL CCN DWTT.

2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:

a. ASTM C858 for design and manufacturing processes.
b. SCTE 77.

B. Precast Concrete Handholes and Boxes:

1. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover must form top of enclosure and must have load rating consistent with that of handhole or box.
2. Configuration: Units must be designed for flush burial and have **closed** bottom unless otherwise indicated.
3. Frame and Cover:
   a. Weatherproof steel frame, with steel cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.

2.5 MANHOLES FOR EXTERIOR UNDERGROUND WIRING

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:

a. ASTM C858 for design and manufacturing processes.

b. SCTE 77.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate layout and installation of duct, duct bank, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in field. Notify Architect if there is conflict between areas of excavation and existing structures or archaeological sites to remain.

3.2 SELECTION OF UNDERGROUND DUCTS

A. Duct for Electrical Branch Circuits: **PVC-40**, direct buried unless otherwise indicated.

3.3 EARTHWORK

Coordinate this article with Drawings.

A. Excavation and Backfill: Comply with Section 312000 "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

3.4 INSTALLATION OF DUCTS AND DUCT BANKS

A. Reference Standards:

1. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NEMA TCB 2 for installation of underground ducts and duct banks.
2. Consult Architect for resolution of conflicting requirements.

3.5 FIELD QUALITY CONTROL

A. Field tests and inspections must be witnessed by the School District.

B. Nonconforming Work:

1. Underground ducts, raceways, and structures will be considered defective if they do not pass tests and inspections.
2. Correct deficiencies and retest as specified above to demonstrate compliance.

END OF SECTION 260543

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Labels.
2. Extruded insulating tubing.
3. Bands.
4. Tapes and stencils.
5. Tags.
6. Signs.
7. Cable ties.

PART 2 - PRODUCTS

2.1 LABELS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Listing Criteria: UL CCN PGDQ2 for components; including UL 969.

B. UL PGDQ2 - Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

2.2 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mil thick by 1 to 2 inch wide; compounded for outdoor use.

C. Underground-Line Warning Tape:

1. Tape:

a. Recommended by manufacturer for method of installation and suitable to identify and locate underground **communications** utility lines.
b. Printing on tape must be permanent and may not be damaged by burial operations.
c. Tape material and ink must be chemically inert and not be subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

2. Color and Printing:
   a. Inscriptions for Orange Tapes: **"CAUTION BURIED FIRE ALARM LINE BELOW".**

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 SELECTION OF COLORS AND IDENTIFICATION MARKINGS

A. Comply with 29 CFR 1910.144 for color identification of hazards, and the following:

1. Fire-protection **and fire-alarm** equipment**, including raceways,** must be finished, painted, or suitably marked safety red.

B. Color-Coding for Phase- and Voltage-Level Identification, 1000 V or Less: Use colors listed below for ungrounded **branch-circuit** conductors.

1. Color must be factory applied.
2. Colors for 208Y/120 V Circuits:
   a. Phase A: Black.
   b. Phase B: Red.
   c. Phase C: Blue.
3. Color for Neutral: **White**.
4. Color for Equipment Ground: **Green**.

3.3 INSTALLATION

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

END OF SECTION 260553

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Preparing subgrades for walks, pavements, turf and grasses, and plants..
2. Subbase course for concrete walks and pavements.
3. Subbase course and base course for asphalt paving.
4. Subsurface drainage backfill for walls and trenches.
5. Excavating and backfilling trenches for utilities and pits for buried utility structures.
6. Detectable warning tape.

B. Related Requirements:

1. Section 013233 "Photographic Documentation" for recording preexcavation and earth-moving progress.
2. Section 015723 "Temporary Storm Water Pollution Control."
3. Section 311000 "Site Clearing" for site stripping, grubbing, stripping[and stockpiling] topsoil, and removal of above- and below-grade improvements and utilities.
4. Section 329113 "Soil Preparation" for planting soils.

1.2 UNIT PRICES

A. Rock Measurement: Volume of rock actually removed, measured in original position, but not to exceed the following. Unit prices for rock excavation include replacement with approved materials.

1. 24 inches outside of concrete forms other than at footings.
2. 12 inches outside of concrete forms at footings.
3. 6 inches outside of minimum required dimensions of concrete cast against grade.
4. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
5. 6 inches beneath bottom of concrete slabs-on-grade.
6. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including

haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than [10 feet]<Insert dimension> in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, will be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock:

1. Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or [3/4 cu. yd.]<Insert volume> for footing, trench, and pit excavation that cannot be removed by rock-excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

a. Equipment for Footing, Trench, and Pit Excavation: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- maximum-width, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom.
b. Equipment for Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket.

I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other fabricated stationary features constructed above or below the ground surface.

J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

L. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct preexcavation conference at Project site.

1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

a. Personnel and equipment needed to make progress and avoid delays.
b. Coordination of Work with utility locator service.
c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
d. Extent of trenching by hand or with air spade.
e. Field quality control.
f. <Insert agenda items>.

1.5 ACTION SUBMITTALS

A. Product Data: For each type product.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D1557.
3. Gradation according to ASTM D 442
4. Electrical Resistivity according to Caltrans Method (CT) 643.
5. Sulfate and chloride contents according to Caltrans Test Method (CT) 417 and 422.
6. Expansion Index according to ASTM D 4829.

C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.7 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.8 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by District Construction Manager.

C. Utility Locator Service:Retain a professional [utility locator service]["Miss Utility"]["Call Before You Dig"]["Dig Safe System"]["One Call"]<Insert name> and have all existing underground utilities located and surface-identified before beginning earth-moving operations.

D. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 015000 "Temporary Facilities and Controls" and Section 311000 "Site Clearing" are in place.

E. Do not commence earth-moving operations until plant-protection measures are in place.

F. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

G. Do not direct vehicle or equipment exhaust towards protection zones.

H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

I. Existing Utilities: Do not interrupt utilities serving facilities occupied by District or others unless permitted in writing by District and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify District not less than five days in advance of proposed utility interruptions.
2. Do not procced with utility interruptions without District's written permission.

J. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: <Insert value>.
2. Plasticity Index: <Insert value>.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of [washed]crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.

J. Sand: ASTM C33/C33M; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water

accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXPLOSIVES

A. Explosives:

1. Do not use explosives.
2. Obtain written permission from authorities having jurisdiction before bringing explosives to Project site or using explosives on Project site.

    a. Perform blasting without damaging adjacent structures, property, or site improvements.
    b. Perform blasting without weakening the bearing capacity of rock subgrade and with the least-practicable disturbance to rock to remain.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.

    a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent

construction without exceeding the following dimensions:

a. 24 inches outside of concrete forms other than at footings.
b. 12 inches outside of concrete forms at footings.
c. 6 inches outside of minimum required dimensions of concrete cast against grade.
d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
e. 6 inches beneath bottom of concrete slabs-on-grade.
f. [6 inches]<Insert dimension> beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms:

1. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

a. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
c. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
d. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

2. Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to

allow for bedding course. Hand-excavate deeper for bells of pipe.

a. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.7 SUBGRADE INSPECTION

A. Notify Project Inspector when excavations have reached required subgrade. The Project Inspector will arrange for the District's Testing Agency to review the subgrade.

B. If Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.8 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by District Construction Manager.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by District Construction Manager.

3.9 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.11 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Backfill voids with satisfactory soil while removing shoring and bracing.

E. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with

utilities testing.

F. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.12 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact

top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus [1/2 inch]<Insert dimension>.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 SUBSURFACE DRAINAGE

A. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course and base course under pavements and

walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material over subbase course under hot-mix asphalt pavement.
3. Shape subbase course and base course to required crown elevations and cross-slope grades.
4. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
5. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

3.18 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

D. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved

degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 20 00

SECTION 32 12 16 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hot-mix asphalt paving.
2. Hot-mix asphalt overlay.
3. Cold milling of existing asphalt pavement.
4. Hot-mix asphalt patching.
5. Asphalt curbs.
6. Asphalt surface treatments.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for demolition and removal of existing asphalt pavement.
2. Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
3. Section 321313 "Concrete Paving" for concrete pavement and for separate concrete curbs, gutters, and driveway aprons.
4. Section 321373 "Concrete Paving Joint Sealants" for joint sealants and fillers at pavement terminations.

1.2 ACTION SUBMITTALS

A. Product Data: Include technical data and tested physical and performance properties.

1. Herbicide.
2. Paving geotextile.
3. Joint sealant.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For paving-mix manufacturer.

B. Material Certificates: Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

1. Aggregates.
2. Asphalt binder.
3. Asphalt cement.
4. Cutback prime coat.
5. Emulsified asphalt prime coat.

6. Tack coat.
7. Fog seal.
8. Undersealing asphalt.

C. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by the California Department of Transportation (CalTrans).

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the California Department of Transportation (CalTrans) of California for asphalt paving work.

1. Comply with requirements of local jurisdictions where more stringent than CalTrans requirements.
2. Measurement and payment provisions and safety program submittals included in CalTrans standard specifications do not apply to this Section.
3. Comply with the applicable standards of the San Diego County Air Pollution Control District for quantities of volatile organic compounds (VOC's) used in all materials.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F.
2. Tack Coat: Minimum surface temperature of 60 deg F.
3. Slurry Coat: Comply with weather limitations in ASTM D3910.
4. Asphalt Base Course[and Binder Course]: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Base Coarse Aggregate: Class 2 Aggregate Base mineral aggregate, 3/4-inch maximum size, as specified in CalTrans Standard Specifications.

C. Asphalt Aggregate: Type B Aggregate, as specified in CalTrans Standard Specifications.

1. 3/4-inch maximum size for base course
2. 1/2-inch maximum size for surface course.
3. 3/8-inch fine for surface course for playgrounds and similar areas.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: ASTM D6373 binder designation PG 58-28.

B. Tack Coat: ASTM D977 emulsified asphalt, or ASTM D2397/D2397M cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

C. Seal Coat: Emulsified asphalt with a minimum 2 percent to 3 percent latex or copolymer added with 2 to 4 lbs of grade #30 silica sand added per gallon and mechanically agitated.

D. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled asphalt shingles from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.

B. Herbicide: Commercial chemical for weed control, registered by the EPA, and not classified as "restricted use" for locations and conditions of application. Provide in granular, liquid, or wettable powder form.

C. Sand: ASTM D1073, Grade No. 2 or No. 3.

D. Paving Geotextile: AASHTO M 288 paving fabric; nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

2.4 MIXES

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes ; designed in accordance with procedures in AI MS-2, "Asphalt Mix Design Methods"; and complying with the following requirements:

1. Comply with CalTrans Standard Specifications.
2. Base Course: Comply with CalTrans Standard Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

3.3 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

1. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
2. Control rate of milling to prevent tearing of existing asphalt course.
3. Repair or replace curbs, driveway aprons, manholes, and other construction damaged during cold milling.
4. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
5. Handle milled asphalt material in accordance with approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."
6. Keep milled pavement surface free of loose material and dust.
7. Do not allow milled materials to accumulate on-site.

3.4 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section

to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.

1. Undersealing: Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.
2. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

C. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd..

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

D. Placing Single-Course Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

E. Placing Two-Course Patch Material: Partially fill excavated pavements with hot-mix asphalt base course mix and, while still hot, compact. Cover asphalt base course with compacted layer of hot-mix asphalt surface course, finished flush with adjacent surfaces.

3.5 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.6 SURFACE PREPARATION

A. Ensure that prepared subgrade has been proof-rolled and is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.

B. Herbicide Treatment: Apply herbicide in accordance with manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

D. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

E. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd..

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.7 INSTALLATION OF PAVING GEOTEXTILE

A. Apply asphalt binder uniformly to existing pavement surfaces at a rate of 0.20 to 0.30 gal./sq. yd..

B. Place paving geotextile promptly in accordance with manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.

C. Protect paving geotextile from traffic and other damage, and place hot-mix asphalt overlay the same day.

3.8 HOT-MIX ASPHALT PLACEMENT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
2. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.9 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints [using either "bulkhead" or "papered" method in accordance with AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."][as indicated on Drawings.]<Insert joint requirement.>
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.10 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density, Marshall Test Method: 96 percent of reference laboratory density in accordance with ASTM D6927 or AASHTO T 245, but not less than 94 percent or greater than 100 percent.
2. Average Density, Rice Test Method: 92 percent of reference maximum theoretical density in accordance with ASTM D2041/D2041M, but not less than 90 percent or greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.11 ASPHALT CURBS

A. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread hot-mix asphalt at a minimum temperature of 250 deg F.

1. Hot-Mix Asphalt: Same as pavement surface-course mix.

B. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed

materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

3.12 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.
2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. Asphalt Traffic-Calming Devices: Compact and form asphalt to the shapes indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.13 SURFACE TREATMENTS

A. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

B. Slurry Seals: Apply slurry coat in a uniform thickness in accordance with ASTM D3910 and allow to cure.

1. Roll slurry seal to remove ridges and provide a uniform, smooth surface.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: District will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined in accordance with ASTM D3549/D3549M.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. Replace and compact hot-mix asphalt where core tests were taken.

E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.15 WASTE HANDLING

A. General: Handle asphalt-paving waste in accordance with approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."

END OF SECTION 32 12 16

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes concrete paving including the following:

1. Roadways.
2. Curbs and gutters.
3. Walks.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.
2. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.

6. Applied finish materials.
7. Bonding agent or epoxy adhesive.
8. Joint fillers.

1.5 REGULATORY REQUIREMENTS

A. Portland cement concrete paving and concrete finishes:

1. Portland cement concrete paving shall be stable, firm, and slip resistant and shall comply with CBC Sections 11B-302 and 11B-403.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Comply with local governing regulations if more stringent than herein specified.

B. Comply with applicable provisions of the following, except as otherwise indicated:

1. Applicable portions of the CBC.
2. The U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities.
3. Conform to applicable City codes for paving work on public property.

C. Continuous surfaces, including walks and sidewalks, shall have a continuous common surface, not interrupted by abrupt changes in level exceeding 1/2-inch.

D. All concrete paving with a slope less than 5 percent shall have a medium broom finish, and all concrete paving with a slope equal to or greater than 5 percent shall have a slip resistant heavy broom finish.

E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

F. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

G. Concrete Testing Service: Engage a qualified independent testing agency to design concrete mixes.

1. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
2. Qualification requirements are in addition to those specified in Section 01 40 02 "Quality Requirements / Contractor Laboratory."

1.7 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.[Do not use notched and bent forms.]

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, fabricated from as-drawnsteel wire into flat sheets.

B. Epoxy-Coated Welded-Wire Reinforcement: ASTM A884/A884M, Class A, plain steel.

C. Reinforcing Bars: ASTM A615/A615M, Grade 60; deformed.

D. Galvanized Reinforcing Bars: ASTM A767/A767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A615/A615M, Grade 60 deformed bars.

E. Epoxy-Coated Reinforcing Bars: ASTM A775/A775M or ASTM A934/A934M; with ASTM A615/A615M, Grade 60 deformed bars.

F. Steel Bar Mats: ASTM A184/A184M; with ASTM A615/A615M, Grade 60 deformed bars; assembled with clips.

G. Plain-Steel Wire: ASTM A1064/A1064M, as drawn.

H. Deformed-Steel Wire: ASTM A1064/A1064M.

I. Epoxy-Coated-Steel Wire: ASTM A884/A884M, Class A; coated, plain.

J. Epoxy-Coated, Joint Dowel Bars: ASTM A775/A775M; with ASTM A615/A615M, Grade 60 plain-steel bars.

K. Tie Bars: ASTM A615/A615M, Grade 60; deformed.

L. Hook Bolts: ASTM A307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

M. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

N. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

O. Zinc Repair Material: ASTM A780/A780M.

2.4 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C150/C150M, gray portland cement Type II, low alkali.
2. Fly Ash: ASTM C618, or Class F.

B. Normal-Weight Aggregates: ASTM C33/C33M, [Class 4S][Class 4M][Class 1N]<Insert class>, uniformly graded. Provide aggregates from a single source[with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials].

1. Fine Aggregate:Minimum sand equivalent (ASTM D 2419) is 80..
2. Coarse Aggregate: Minimum cleanness value (CalTrans Test cv 227) is 80.

C. Air-Entraining Admixture: ASTM C260/C260M.

D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.

2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.

E. Water: Potable and complying with ASTM C94/C94M.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Euclid Chemical Company (The); an RPM company.
c. L&M Construction Chemicals, Inc.
d. Or Equal.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Dayton Superior.
c. L&M Construction Chemicals, Inc.
d. Or Equal.

2.6 RELATED MATERIALS

A. Joint Fillers: [ASTM D1751, asphalt-saturated cellulosic fiber][ASTM D1752, cork or self-expanding cork][or][ASTM D8139, semirigid, closed-cell polypropylene foam] in preformed strips.

B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

C. Bonding Agent: ASTM C1059/C1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

D. Epoxy-Bonding Adhesive: ASTM C881/C881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

E. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8-to 1/4-inch.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Scofield, L. M. Company.
c. Sika Corporation.
d. Or Equal.

2.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience. Mix designs are subject to approval of the District's testing laboratory.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method. Do not use District's field quality control testing agency for this purpose. At least one test shall be within one year from date of submittal.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Pozzolan:15 percent.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content, 1-inch Nominal Maximum Aggregate Size: 3 percent plus or minus 1-1/2 percent.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved sample, if applicable..

G. Concrete Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 3000 psi.
2. Maximum W/C Ratio at Point of Placement: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction[and repeat in perpendicular direction]. Limit vehicle speed to 3 mph.
2. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 312000 "Earth Moving."

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

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 INSTALLATION OF STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D3963/D3963M.

F. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.
3. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of the concrete thickness, as follows[, to match jointing of existing adjacent concrete paving]:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
2. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom,

perpendicular to line of traffic.

3.8 SPECIAL FINISHES

A. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft. of dampened, slip-resistive aggregate over paving surface in two applications. Tamp aggregate flush with surface using a steel trowel, but do not force below surface.
2. Uniformly distribute approximately two-thirds of slip-resistive aggregate over paving surface with mechanical spreader, allow to absorb moisture, and embed by power floating. Follow power floating with a second slip-resistive aggregate application, uniformly distributing remainder of material at right angles to first application to ensure uniform coverage, and embed by power floating.
3. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
4. After curing, lightly work surface with a steel-wire brush or abrasive stone and water to expose nonslip aggregate.

3.9 INSTALLATION OF DETECTABLE WARNINGS

A. Blockouts: Form blockouts in concrete for installation of detectable paving units specified in Section 321726 "Tactile Warning Surfacing."

1. Tolerance for Opening Size: Plus 1/4 inch, no minus.

B. Cast-in-Place Detectable Warning Tiles: Form blockouts in concrete for installation of tiles specified in Section 321726 "Tactile Warning Surfacing." Screed surface of concrete where tiles are to be installed to elevation, so that edges of installed tiles will be flush with surrounding concrete paving. Embed tiles in fresh concrete to comply with Section 321726 "Tactile Warning Surfacing" immediately after screeding concrete surface.

3.10 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing moisture-retaining-cover curing curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.11 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/4 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.12 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172/C172M will be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C39/C39M; test one specimen at seven days and two specimens at 28 days.

a. A compressive-strength test to be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Test results to be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests to contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

D. Additional Tests: Testing and inspecting agency will make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

E. Concrete paving will be considered defective if it does not pass tests and inspections.

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

3.13 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as

possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13

SECTION 32 13 73 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Expansion and contraction joints within Portland cement concrete pavement..
2. Cold-applied joint sealants.
3. Joint-sealant backer materials.
4. Primers.

1.2 ACTION SUBMITTALS

A. Product Data:

1. For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of joint sealant and accessory.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.5 FIELD CONDITIONS

A. 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.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain joint sealants from single manufacturer for each sealant type.

2.2 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backer materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

C. Cold-Applied Joint Sealants

1. Single-Component, Nonsag, Low-Modulus, Neutral-Curing, Silicone Joint Sealant for Concrete: ASTM D 5893/D 5893M, Type NS.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Roadsaver Silicone-SL; Crafco Inc.
2) 888: Dow Corning Corporation.
3) Pecora Corporation.
4) Or Equal.

2. Multicomponent, Pourable, Urethane, Chemically Curing Elastomeric Formulation Jet-Fuel-Resistant Joint Sealant for Concrete: ASTM C 920; Type M; Grade P; Class 12-1/2; for Uses T, M, and, as applicable to joint substrates indicated, O.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1) Vulkem 202; Mameco International.
2) Urexpan NR-300; Pecora Corporation.
3) Sealtight Gardox; W.R. Meadows, Inc.
4) Or Equal.

2.3 JOINT-SEALANT BACKER MATERIALS

A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

B. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D5249, Type 3, of

diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

C. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.4 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints 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.

3.2 PREPARATION

A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

B. Joint Priming: Prime joint substrates where indicated or 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.

3.3 INSTALLATION OF JOINT SEALANTS

A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions.

C. Install joint-sealant backers to support joint 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 joint-sealant backer materials.
2. Do not stretch, twist, puncture, or tear joint-sealant backer materials.
3. Remove absorbent joint-sealant backer materials that have become wet before sealant application and replace them with dry materials.

D. Install joint sealants immediately following backer material installation, using proven techniques that comply with the following:

1. Place joint sealants so they fully contact 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.

E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants in accordance with the following requirements 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 joint sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING AND PROTECTION

A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

B. 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 and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

END OF SECTION 32 13 73

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
NATIONAL SCHOOL DISTRICT

SYMBOLS LEGEND

LOBBY / 256B	ROOM NAME AND ROOM NUMBER	1 S#B	WALL TAGS - REFER TO SHEET A-111
1234	KEYNOTE TAG - NEW WORK	1	DOOR TAGS - REFER TO SHEET A-501
1234	KEYNOTE TAG - DEMOLITION WORK	XX	WINDOW TAGS - REFER TO SHEET A-501
FEC	FIRE EXTINGUISHER CABINET - SEE DETAIL	℄	CENTER LINE
1 / 4 SHEET 2 / 3	SHEET NUMBER; ELEVATION CALLOUT; VIEW NUMBER, TYP.	A-B	GRID LINES; GRID HEAD
1 A-444 — 1 A-444	BUILDING SECTION TAG		
1 A-444	WALL SECTION TAG		
1 A-444	DETAIL TAG		
1 A-444	DETAIL CALLOUT/TAG		
DESCRIPTION X'-X"	FINISH FLOOR LEVEL SYMBOL		
DESCRIPTION X'-X"	SPOT ELEVATION		
10'-0"	DIMENSION		
120"	CLEAR FLOOR SPACE DIMENSION		
10'-0"	FACE OF FINISH DIMENSION		
888 24 24 24 MODIFICATIONS	CASEWORK TAG		

APPLICABLE CODES & STANDARDS

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR

2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR

2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 2, TITLE 24 CCR

2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR

2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR

2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR

2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR

2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR

2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

DEFERRED APPROVALS

INSTALLATION OF DEFERRED APPROVAL ITEMS SHALL NOT BE STARTED UNTIL DETAILED PLANS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR ENGINEER WHO HAS BEEN DELEGATED THE RESPONSIBILITY OF COVERING THE WORK SHOWN ON A PARTICULAR PLAN OR SPECIFICATION, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. DEFERRED ITEMS SHALL BE COMPLETED PRIOR TO THE OCCUPANCY OF BUILDINGS AFFECTED BY THE DEFERRED WORK.

DEFERRED APPROVAL ITEMS ARE AS FOLLOWS:

ITEM 1	NO DEFERRED APPROVALS

PROJECT DIRECTORY

CLIENT
NATIONAL SCHOOL DISTRICT
1500 N 18TH STREET
NATIONAL CITY, CA 91950
Tel: (619) 336-7705
Contact: DAVID CASTILLO
Email: dcastillo@nsd.us

ARCHITECT
SGPA ARCHITECTURE & PLANNING
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Tel: (619) 297-0131
Contact: DEREK BUSKIRK
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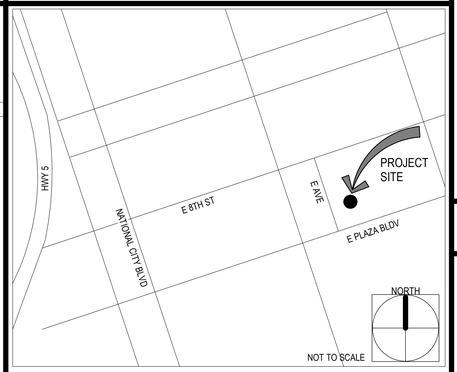
ELECTRICAL / FIRE ALARM
RIZZA ENGINEERING, INC.
12320 STOWE DR. STE C
POWAY, CA 92064
Tel: (858) 939-9100
Contact: STEVEN GARCIA
Email: steven.garcia@rizzaengineering.com

VICINITY MAP



SCOPE OF WORK

PROJECT INCLUDES THE FOLLOWING SCOPE ITEMS:

- PROVIDE FIRE ALARM ALTERATIONS DESIGN FOR (2) EXISTING KINDERGARTEN CLASSROOMS INCLUDING ROUTING NEW CONDUIT FROM EXISTING ADMIN BUILDING TO EXISTING BUILDING C .

DSA APPROVAL OF THIS BUILDING SHALL NOT BE CONSTRUED AS THE CERTIFICATION OF COMPLIANCE FOR THIS BUILDING AS REQUIRED BY THE FIELD ACT AND EDUCATION CODE SECTION 17280-17316 AND SECTIONS 81130-81147.

PROJECT DATA

BUILDING	C
CONSTRUCTION TYPE	TYPE VB
OCCUPANCY	E
SPRINKLERED	NO
GROSS AREA	2,940 SF
SITE AREA	230,276 SF (5.29 ACRES)
FIRE SEVERITY ZONE	NONE

DSA GENERAL NOTES

1. ALL WORK SHALL CONFORM TO 2022 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
3. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. THE INSPECTOR OF RECORD FOR THIS PROJECT SHALL BE CLASS 2.
4. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
5. THE INTENT OF THESE DRAWINGS AND INSPECTIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WIHT TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCR), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. SECTION 4-317(C), PART 1, TITLE 24, CCR.
6. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENT HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

SITE SAFETY PLAN

A WRITTEN SITE SAFETY PLAN IN COMPLIANCE WITH CFC 3303.1.1 MUST BE PREPARED AND AVAILABLE ON SITE PRIOR TO COMMENCEMENT OF ANY MOBILIZATION, DEMOLITION, AND/OR CONSTRUCTION.

SHEET INDEX

STATEMENT OF GENERAL CONFORMANCE

Statement of General Conformance

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS.
INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

(Application No. 04-123919 **File No.** _____**)**

[X] The drawings or sheets listed on the cover or index sheet
[ ] This drawing, page of specifications/calculations

have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has been examined by me for:

1) design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) coordination with my plans and specifications and is acceptable for incorporation into the construction of this project.

The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344" of Title 24, Part 1. *(Title 24, Part 1, Section 4-317 (b))*

I certify that: [X] All drawings or sheets listed on the cover or index sheet [ ] This drawing or page

[X] is/are in general conformance and [X] have been coordinated	[ ] is/are in general conformance and [ ] have been coordinated
Signature: _____ Date: 10/09/2024	Signature: _____ Date: _____
Architect or Engineer designated to be in general responsible charge	**Architect or Engineer delegated responsibility for this portion of the work.**
Print Name: Keith Pittsford	Print Name: _____
License Number: C-20589 Expiration Date: 07/31/2025	License Number: _____ Expiration Date: _____

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024
DSA

CONSULTANT

STAMP
KEITH PITTSFORD
No. C-20589
REN. JUL 31, 25
LICENSED ARCHITECT
STATE OF CALIFORNIA

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

TITLE SHEET / SHEET INDEX

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
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FIRE & LIFE SAFETY NOTES

1. ALL INTERIOR FINISHES SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 8, PART 2, TITLE 24, CCR. ALL FINISHES SHALL HAVE A FLAME SPREAD INDEX OF 75 OR LESS AND A SMOKE-DEVELOPED INDEX NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E84. AND SHALL HAVE A CLASS A OR B FLAME SPREAD INDEX PER TABLE 803.11.
2. ALL INSULATION MATERIALS INSTALLED WITHIN ROOF - CEILING ASSEMBLIES, ATTICS, OR WALLS SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
3. ALL RATED DOORS SHALL BE POSITIVE LATCHING.
4. ALL FIRE RATED DOOR ASSEMBLIES SHALL BE PROVIDED WITH APPROVED GASKETING MATERIAL INSTALLED TO PROVIDE A SEAL WHERE THE DOOR MEETS THE STOP ON BOTH SIDES AND ACROSS THE TOP.
5. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE FOR ALL RATED OPENING ASSEMBLIES.
6. PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF ASTM-E119 AND IN COMPLIANCE WITH THE PROJECT MANUAL.
7. ALL ELECTRICAL, MECHANICAL, AND PLUMBING PENETRATIONS, INCLUDING CONDUITS AND PIPING, THROUGH FIRE RATED WALL, FLOOR AND CEILING ASSEMBLIES SHALL BE TIGHTLY AND SOLIDLY SEALED WITH FIRESTOPPING COMPLYING WITH ASTM E814. WHERE ITEM PENETRATES AN AREA SEPARATION WALL, THE SECTION PASSING THROUGH THE WALL SURFACE AND THE FIXTURE CONNECTIONS THERETO SHALL BE ONLY OF METAL.
8. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A-10BC WITHIN A 75 FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR.
9. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 1-BC FOR ELECTRICAL ROOMS, MECHANICAL ROOMS, KITCHENS, AND TRASH ROOMS.
10. PROVIDE AN APPROPRIATE NUMBER OF PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 4A-60BC FOR PROTECTION DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY PEDESTRIAN PROTECTION AS REQUIRED BY LOCAL CODE AND SPECIFICATION.
12. DO NOT BLOCK EXITS AT ANY TIME.
13. PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS OF FIRE RATED WALLS, FLOORS, SHAFTS AND CEILINGS. COMBINATION FIRE/SMOKE DAMPERS SHALL BE USED AT DUCT PENETRATIONS OF RATED CORRIDOR WALLS.
14. FIRE DAMPER DETAILS SHOWN FOR REFERENCE ONLY. FIRE DAMPERS SHALL BE APPROVED AND LISTED BY STATE FIRE MARSHAL. INSTALL STRICTLY PER MANUFACTURER'S PRINTED INSTRUCTIONS AND LISTING APPROVAL. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
15. DUCT INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS LOCATED IN BUILDINGS SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED.
16. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF THE CALIFORNIA ELECTRICAL CODE, STANDARDS AS DEFINED IN CHAPTER 35 CALIFORNIA BUILDING CODE AND APPLICABLE NFPA STANDARDS.
17. THE CONTRACTOR SHALL PROVIDE PROTECTION COMPLYING WITH TITLE 8, CCR, DURING WELDING. FURTHER PROTECTION SHALL BE PROVIDED TO ANY OCCUPANTS AND THE PUBLIC WITH PORTABLE SOLID VISION BARRICADES AROUND LOCATION WHERE WELDING IS BEING PERFORMED. PROVIDE SIGNS WARNING AGAINST LOOKING AT WELDING WITHOUT PROPER EYE PROTECTION OR EQUIVALENT.
18. FIRE SPRINKLER SYSTEM AND AUTOMATIC EXTINGUISHING SYSTEM IS A DEFERRED APPROVAL SYSTEM OF THE WORK. FIRE SPRINKLER SYSTEM SHOWN ON THE DRAWINGS AND SPECIFIED IN THE PROJECT MANUAL SHALL BE USED AS THE BASIS FOR BIDDING AND PREPARATION OF DEFERRED APPROVAL SHOP DRAWINGS. IT SHALL NOT BE USED FOR CONSTRUCTION. DEFERRED APPROVAL SHOP DRAWINGS SHALL BE SUBMITTED TO DIVISION OF STATE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. DRAWINGS SHALL BE STAMPED AND SIGNED BY A C-16 CONTRACTOR, LICENSED FIRE PROTECTION ENGINEER, LICENSED MECHANICAL ENGINEER OR LICENSED CIVIL ENGINEER. PROVIDE TESTING IN THE PRESENCE OF THE ENFORCING AGENCY AT VARIOUS STAGES AND UPON COMPLETION AS SPECIFIED AND AS DIRECTED BY THE ENFORCING AGENCY. THE ARCHITECT WILL REVIEW SHOP DRAWINGS FOR HEAD TYPE, LOCATION CONFLICT AND SEISMIC RESTRAINT ONLY.

ACCESSIBILITY NOTES

1. PATH OF TRAVEL (P.O.T.) AS INDICATED IS A BARRIER FREE ACCESS WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" BEVELED AT 1:2 MAXIMUM SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL AND IS AT LEAST 48" WIDE. SURFACE IS SLIP RESISTANT, STABLE, FIRM, AND SMOOTH. CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5% UNLESS OTHERWISE INDICATED. (P.O.T.) SHALL MAINTAIN FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM (11B-307.4) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM THE WALL AND ABOVE 27" AND LESS THAN 80" (11B-307.2). CONTRACTOR TO VERIFY THAT ALL BARRIERS IN THE PATH OF TRAVEL HAVE BEEN REMOVED OR WILL BE REMOVED UNDER THIS PROJECT, AND PATH OF TRAVEL COMPLIES WITH DIVISION 4, CHAPTER 11B, CBC.
2. PUBLIC WALKS FROM THE BUILDING TO THE PUBLIC WAY AND TO PARKING AREAS DESIGNATED AS ACCESSIBLE SHALL COMPLY WITH CHAPTER 11B, PART 2, TITLE 24, CCR. PROVIDE WALKS A MINIMUM OF 48 INCHES WIDE AND WITH A GRADIENT NOT GREATER THAN 5% (1:20), WITH NO ABRUPT CHANGES GREATER THAN 1/2 INCHES IN THE DIRECTION OF TRAVEL.
3. PROVIDE WALKS WITH LEVEL LANDINGS AT ALL EXTERIOR EXIT DOORS COMPLYING WITH CHAPTERS 10 AND 11B, PART 2, TITLE 24, CCR.
4. SURFACE CROSS SLOPE GRADIENT SHALL NOT EXCEED 2 PERCENT PER FOOT AT WALKS AND PATHS WITHIN THE ACCESSIBLE PATH OF TRAVEL.
5. PROVIDE ACCESSIBLE BUILDING ENTRANCES COMPLYING WITH CHAPTERS 10 AND 11B, PART 2, TITLE 24, CCR., UNLESS SHOWN OTHERWISE.
6. PROVIDE WARNING CURB, RAILING/GUIDE RAIL OR OTHER PROTECTIVE DEVICE AT ALL ABRUPT CHANGES IN LEVEL, (EXCEPT BETWEEN A WALK/SIDEWALK AND ADJACENT STREET OR DRIVEWAY) COMPLYING WITH CHAPTER 10, PART 2, TITLE 24, CCR.
7. DOOR CONSTRUCTION AND HARDWARE: A) PROVIDE THE BOTTOM 10 INCHES OF ALL DOORS (EXCEPT AUTOMATIC AND SLIDING DOORS) WITH A SMOOTH UNINTERRUPTED SURFACE PERMITTING THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. B) LIMIT DOOR OPERATING FORCE IN COMPLIANCE WITH CHAPTER 10, PART 2, TITLE 24, CCR.
8. ACCESSIBLE WATER CLOSET COMPARTMENTS AND FIXTURES: A) PROVIDE ACCESSIBLE WATER CLOSETS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. B) PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 15, PART 5, TITLE 24, CCR. C) EXCEPT FOR DOOR OPENING WIDTHS AND DOOR SWINGS, PROVIDE A MINIMUM 44 INCH WIDE CLEAR AND UNOBSTRUCTED ACCESS PATH TO ACCESSIBLE WATER CLOSET COMPARTMENTS.
9. ACCESSIBLE URINALS: **A)** PROVIDE ACCESSIBLE URINALS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 15, PART 5, TITLE 24, CCR.
10. ACCESSIBLE LAVATORIES: **A)** PROVIDE LAVATORIES COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 16, PART 5, TITLE 24, CCR.
11. ACCESSIBLE SINKS: **A)** PROVIDE SINKS COMPLYING WITH ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 16, PART 5, TITLE 24, CCR. **C)** PROVIDE KNEE CLEARANCE UNDER SINKS MINIMUM 30 INCHES WIDE AND MINIMUM 27 INCHES HIGH, MEASURED FROM FINISH FLOOR TO BOTTOM OF SINK, AND EXTENDING A MINIMUM OF 19 INCHES FROM APRON FRONT EDGE. **D)** PROVIDE SINKS WITH MAXIMUM DEPTH OF 6-1/2 INCHES.
12. GRAB BARS: **A)** PROVIDE GRAB BARS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** SHARP OR ABRASIVE SURFACES ADJACENT TO GRAB BARS ARE NOT PERMITTED. **C)** LOCATE GRAB BARS ON ONE SIDE AND THE BACK OF THE WATER CLOSET, 33 INCHES ABOVE AND PARALLEL TO THE FLOOR. PROVIDE SIDE GRAB BARS AT LEAST 48 INCHES LONG, WITH THE FRONT END POSITIONED 24 INCHES IN FRONT OF THE WATER CLOSET. LOCATE SIDE MOUNTED GRAB BAR MAXIMUM 12 NCHES FROM REAR WALL. **D)** PROVIDE REAR GRAB BARS AT LEAST 36 INCHES LONG, MOUNTED WITH CLOSEST END A MAXIMUM OF 6 INCHES FROM SIDE WALL. **E)** GRAB BARS SHALL NOT ROTATE IN THEIR FITTINGS. **D)** FOR MOUNTING HEIGHTS SEE ACCESSIBLE DIMENSION SCHEDULE
13. ACCESSIBLE TOILET ACCESSORIES: **A)** PROVIDE ACCESSORIES COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** WHERE TOWEL, SOAP AND SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED, PROVIDE AT LEAST ONE OF EACH TYPE WITH ALL OPERABLE PARTS, INCLUDING COIN SLOTS, LOCATED MAXIMUM 40 INCHES AFF. **C)** MOUNT MIRRORS WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE MAXIMUM 40 INCHES AFF. **D)** TOILET TISSUE DISPENSER SHALL BE LOCATED ON THE WALL CLOSEST TO WATER CLOSET, 7" MIN AND 9" MAX IN FRONT OF WATER CLOSET, MEASURED TO THE CENTERLINE OF THE DISPENSER.
14. ACCESSIBLE DRINKING FOUNTAINS: PROVIDE DRINKING FOUNTAINS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR, CHAPTER 16, PART 5, TITLE 24, AND CCR.
15. ACCESSIBILITY SIGNAGE - CBC 11B-703: **A)** PROVIDE ACCESSIBLE PARKING SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION II, PART 2, TITLE 24, CCR. **B)** PROVIDE TOILET ROOM ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR. **C)** PROVIDE PERMANENT ROOM ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR. **D)** PROVIDE DIRECTIONAL AND INFORMATIONAL ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR

GENERAL SITE NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH STATE, FEDERAL AND LOCAL CODES, ORDINANCES, LAWS AND THE CALIFORNIA BUILDING CODE, 2019 EDITION, CALIFORNIA FIRE CODE, 2019 EDITION.
2. THE RECOMMENDATIONS OF THE SOILS REPORT FOR THE SITE EARTHWORK. ARE AVAILABLE UPON REQUEST FROM THE SOILS ENGINEER.
3. THE PROJECT MANUAL, INCLUDING SPECIFICATIONS, UNDER SEPARATE COVER, IS AN INTEGRAL PART OF THE CONTRACT DOCUMENTS.
4. VISIT THE SITE, VERIFY ALL DIMENSIONS BEFORE SUBMITTING A BID. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, AND OBTAIN ALL REQUIRED PERMITS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ACCURATE LOCATION OF NEW BUILDING PADS, CURBS, DRIVES AND WALKWAYS, AND FOR MAINTAINING PROPER RELATIONSHIPS TO PROPERTY LINES, PARCEL LINES AND EASEMENTS.
6. PROVIDE LABOR AND MATERIALS NECESSARY TO COMPLETE ALL FINISH GRADING, AS SHOWN IN THE CONTRACT DOCUMENTS INCLUDING CIVIL AND LANDSCAPE DRAWINGS. THIS SHALL INCLUDE FINAL CONTOUR GRADING AND BERMING PER LANDSCAPE ARCHITECT'S PLANS.
7. VERIFY ALL ELEVATIONS, FLOW LINES, EXISTING CONDITIONS, AND POINTS OF CONNECTIONS WITH ADJOINING PROPERTY. DISCREPANCIES ARE TO BE CALLED TO THE ATTENTION OF THE ARCHITECT AND CIVIL ENGINEER BEFORE PROCEEDING WITH ANY WORK.
8. PROVIDE POSITIVE DRAINAGE OF SURFACE WATER AWAY FROM ALL BUILDINGS, SLABS AND GRADED PADS, WITHOUT PONDING OF WATER ADJACENT TO BUILDINGS OR ON PAVEMENTS. DRAINAGE OF PAVED AND LANDSCAPED AREAS TO BE A MINIMUM OF 1%, UNLESS OTHERWISE NOTED. MAXIMUM SLOPE AT PARKING LOT TO BE 5% EXCEPT AT DRIVES.
9. ALL EARTH WORK TO BE PERFORMED UNDER THE OBSERVATION OF THE SOILS ENGINEER IN ACCORDANCE WITH RECOMMENDATIONS OF THE SOILS REPORT TO ASSURE PROPER SITE PREPARATION, SELECTION OF SATISFACTORY FILL MATERIALS IF ANY, AND PLACEMENT AND COMPACTION OF THE FILLS.
10. COORDINATE SITE GRADING, UTILITY WORK, DRIVEWAY AND FINISH WORK WITH EXISTING AND NEW OFF-SITE CONDITIONS.
11. FIRE HYDRANTS TO BE INSTALLED UNDER THIS CONTRACT ARE TO BE LOCATED PER CIVIL DRAWINGS.
12. ON-SITE WATER, FIRE, SANITARY SEWER AND STORM DRAINAGE TO BE PER CIVIL ENGINEER'S DRAWINGS. INSTALL WATER METER VAULTS WHERE SHOWN. CONTRACTOR TO ADJUST VAULTS TO FINISH GRADE.
13. ALL BUILDINGS INDICATED ARE UNDER SEPARATE CONTRACT PROVIDE GRADED PADS & UTILITIES PER CIVIL ENGINEER'S DRAWINGS AND COORDINATE WITH BUILDING CONTRACTORS.
14. SIGN CONTRACTOR SHALL ACQUIRE SEPARATE PERMITS FOR INSTALLATION OF ALL SIGNS AS REQUIRED BY LOCAL PUBLIC AGENCIES.
15. THE PARKING LOT SHALL HAVE PROPERLY POSTED SIGNS THAT STATE THE USE OF THE PARKING AREA IS FOR THE EXCLUSIVE USE OF EMPLOYEES AND CUSTOMERS OF THIS PROJECT. (SEE CALIFORNIA VEHICLE CODE SECTIONS 22507.8, 22511.5, 22511.8)
16. PERSONNEL OPERATING AT THE CONSTRUCTION SITE SHALL HAVE A MEANS OF COMMUNICATING AND REPORTING A FIRE OR MEDICAL EMERGENCY. THIS REQUIREMENT MAY BE MET BY USE OF A CELLULAR TELEPHONE AND BY DIALING 911. CELLULAR TELEPHONE CALLS TO 911 NOW REPORT TO THE CLOSEST PUBLIC SERVICE ANSWERING POINT: FREMONT POLICE DISPATCH FOR THE PROJECT SITE.

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE CODES AND ALL APPLICABLE LOCAL ORDINANCES. WHERE CONTRACT DOCUMENTS EXCEED SUCH REQUIREMENTS, WITHOUT VIOLATING SUCH CODES, REGULATIONS AND ORDINANCES, CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CODES CONFLICT, THE MORE STRINGENT SHALL APPLY.
2. DURING THE CONSTRUCTION PERIOD, IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CONDITIONS AT THE PROJECT SITE, TO MEET THE REQUIREMENTS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND CALIFORNIA OCCUPATIONAL REGULATIONS . THIS PROVISION SHALL COVER THE CONTRACTOR'S EMPLOYEES AND ALL OTHER PERSONS WORKING UPON OR VISITING THE SITE. THE CONTRACTOR SHALL BECOME FULLY INFORMED OF ALL APPLICABLE STANDARDS AND REGULATIONS AND INFORM ALL PERSONS AND REPRESENTATIVES RESPONSIBLE FOR WORK UNDER THIS CONTRACT.
3. CONFIRM ALL NEW AND EXISTING CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY ARCHITECT IMMEDIATELY IN WRITING OF ALL DISCREPANCIES OR CONFLICTS. DO NOT PROCEED WITH WORK IN THE AREA OF DISCREPANCY OR CONFLICT UNTIL DIRECTION IS GIVEN BY ARCHITECT. IF THE CONTRACTOR PROCEEDS WITHOUT DIRECTION FROM ARCHITECT, IT SHALL BE AT CONTRACTORS RISK, AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CORRECTIVE ACTION.
4. REVIEW THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF SYSTEMS SHOWN ON CONSULTING ENGINEERS DOCUMENTS. DISCREPANCIES BETWEEN THE ARCHITECTURAL AND CONSULTING ENGINEER'S DOCUMENTS SHALL BE BROUGHT TO ARCHITECT'S ATTENTION FOR DIRECTION. CONSTRUCTION INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY CONTRACTOR AT NO EXPENSE TO THE OWNER.
5. DO NOT SCALE THE CONSTRUCTION DOCUMENTS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED GRAPHICS. NOTIFY ARCHITECT IMMEDIATELY IN WRITING OF ALL ADDITIONAL REQUIRED DIMENSIONS. DO NOT PROCEED WITH WORK IN THE AREA OF DISCREPANCY OR CONFLICT UNTIL DIRECTION IS GIVEN BY ARCHITECT. IF THE CONTRACTOR PROCEEDS WITHOUT DIRECTION FROM ARCHITECT, IT SHALL BE AT CONTRACTORS RISK, AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CORRECTIVE ACTION.
6. CORRECT ALL WORK INSTALLED IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS BY CONTRACTOR AS DIRECTED BY ARCHITECT AND AT NO ADDITIONAL EXPENSE TO THE OWNER.
7. VISIT JOB SITE PRIOR TO BEGINNING WORK AND VERIFY ALL DIMENSIONS.
8. SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES AND LICENSES REQUIRED FOR PROPER COMPLETION OF THE WORK. REQUEST ALL INSPECTIONS REQUIRED BY LOCAL GOVERNMENTAL AGENCIES AND COORDINATE THE WORK ACCORDINGLY.
9. WHERE WORK OR EQUIPMENT IS INDICATED "N.I.C." (NOT IN CONTRACT) ON THE DRAWINGS, SUCH WORK AND/OR EQUIPMENT SHALL BE PROVIDED BY OTHERS. CONTRACTOR SHALL COORDINATE AND COOPERATE TO EFFECT SUCH INSTALLATION.
10. ALL PLAN DIMENSIONS FOR MASONRY AND CONCRETE REPRESENT FACE OF MATERIAL AND OPENING UNLESS NOTED OTHERWISE.
11. ALL PLAN DIMENSIONS FOR STUD WALLS REPRESENT FACE OF STUD UNLESS NOTED OTHERWISE.
12. ALL PLAN DIMENSIONS SHOWN AT CENTER OF WALL REPRESENT CENTER LINE OF STUD OR STRUCTURAL ELEMENT UNLESS NOTED OTHERWISE.
13. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT THE REVIEW OF ARCHITECT UNLESS NOTED (+/-) OR "VERIFY". DIMENSIONS NOTED "HOLD" SHALL BE CONSIDERED AS ABSOLUTE AND USED FOR LAY-OUT CONTROL UNLESS OTHERWISE DIRECTED BY ARCHITECT.
14. ALL PLAN DIMENSIONS MARKED "CLEAR" OR "CLR" ARE TO FACE OF FINISH, TYPICAL.
15. ALL HEIGHTS ARE DIMENSIONED FROM TOP OF SLAB UNLESS NOTED "AFF" (ABOVE FINISH FLOOR).
16. "TYPICAL" MEANS COMPARABLE CHARACTERISTICS FOR THE ELEVATION OR DETAIL NOTED. WHEN A DETAIL OR NOTE IS IDENTIFIED AS "TYPICAL", CONTRACTOR SHALL APPLY THIS DETAIL OR NOTE TO EVERY LIKE CONDITION, WHETHER OR NOT THE REFERENCE IS REPEATED IN EVERY INSTANCE. VERIFY DIMENSIONS AND ORIENTATION ON PLANS.
17. PROVIDE WORK NOT SPECIFICALLY DETAILED OR SPECIFIED IN ACCORDANCE WITH DETAILS OR SIZES COVERING SIMILAR WORK.
18. "SIMILAR" MEANS COMPARABLE CHARACTERISTICS FOR THE ELEVATION OR DETAIL NOTED VERIFY DIMENSIONS AND ORIENTATION ON PLANS.
19. ABBREVIATIONS THROUGHOUT THE DOCUMENTS COMPLY WITH DOCUMENT ABBREVIATION LIST OR ARE THOSE IN COMMON USE. ARCHITECT WILL DEFINE THE INTENT OF ANY IN QUESTION.
20. REFER TO THE PROJECT MANUAL FOR GENERAL CONDITIONS, SUPPLEMENTARY AND SPECIAL CONDITIONS, AND OTHER REQUIREMENTS.
21. PROVIDE BARRICADES AND PROTECTIVE DEVICES SEPARATING CONSTRUCTION AREAS. PROVIDE TEMPORARY PASSAGES AS REQUIRED. PRIOR TO DELIVERY OF MATERIALS TO CONSTRUCTION ZONE AND REMOVAL OF WASTE FROM SITE, CHECK WITH OWNER FOR ACCEPTABLE ACCESS ROUTE AND TIME. UNDER NO CIRCUMSTANCES USE AREA OUTSIDE THE CONSTRUCTION ZONE WITHOUT PRIOR CLEARANCE FROM THE OWNER. COMPLY WITH REQUIREMENTS AS SPECIFIED IN PROJECT MANUAL.
22. PROVIDE FOR THE PROPER SEQUENCE OF CONSTRUCTION, LOCATION AND SIZE OF OPENINGS. COORDINATE ALL CONSTRUCTION AS INDICATED BY THE CONTRACT DOCUMENTS, INCLUDING SHOP DRAWINGS REVIEWED BY ARCHITECT.
23. REMOVE ALL TRASH AND DEBRIS DAILY. DO NOT STORE BUILDING MATERIALS IN CORRIDORS AT ANY TIME. COMPLY WITH REQUIREMENTS AS SPECIFIED IN PROJECT MANUAL.
24. VERIFY POINTS OF CONNECTION, INCLUDING SIZES AND LOCATIONS, AND ALL OTHER REQUIRED OPERATING CRITERIA WITH EQUIPMENT MANUFACTURER.
25. COORDINATE THE LOCATION AND TYPE OF ALL ACCESS PANELS REQUIRED FOR ACCESSING MECHANICAL, PLUMBING, ELECTRICAL AND OTHER BUILDING SYSTEMS WITH ARCHITECT.
26. CONTRACTOR SHALL STIPULATE THAT ALL PROPOSED SUBSTITUTIONS ARE EQUAL IN PERFORMANCE AND COMPLY WITH APPLICABLE CODES AND ARE EQUAL IN PERFORMANCE AND COMPLY WITH APPLICABLE CODES AND REGULATIONS. CONTRACTOR'S SUBSTITUTION OF ALTERNATE MATERIALS OR SYSTEMS SHALL BE AT NO ADDITIONAL COST TO OWNER.
27. CONTRACTOR SHALL INSURE ALL CONSTRUCTION SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED BY THE INSPECTOR OF RECORD. FOR CONTINUOUS INSPECTION, TESTING, AND OBSERVATION REQUIREMENTS, REFER TO THE TESTING AND OBSERVATION PROGRAM.

SITE ACCESSIBILITY NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS AS SET FORTH IN TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS AND THE A.D.A.
2. WALKS AND RAMPS SHALL BE 48" MINIMUM IN WIDTH.
3. PROVIDE 80" MINIMUM HEADROOM FROM ALL WALKWAY SURFACES TO ANY OBSTRUCTION.
4. ALL BUILDING ENTRANCES SHALL BE MADE ACCESSIBLE TO THE DISABLED.
5. ALL WALKS SHALL HAVE A SLIP RESISTANT CONCRETE OR ASPHALTIC CONCRETE SURFACE NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2". WHERE LEVEL CHANGES DO OCCUR THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4" MAY BE VERTICAL. SLOPE IN DIRECTION OF TRAVEL SHALL NOT EXCEED 1:20 (5%) WITHOUT HANDRAILS, 1:12 (8%) WITH HANDRAILS.
6. WALKS, SIDEWALKS AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHEREVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN GRATINGS SHALL BE LIMITED TO 1/2" IN ONE DIRECTION. ELONGATED OPENINGS SHALL BE PERPENDICULAR TO DOMINANT DIRECTION OF TRAVEL.
7. AT EVERY ENTRANCE AND AT EVERY MAJOR JUNCTION ALONG A PEDESTRIAN ROUTE OF TRAVEL, THERE SHALL BE A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL INDICATE THE DIRECTION TO ACCESSIBLE BUILDING ENTRANCES AND FACILITIES AND SHALL COMPLY WITH REQUIREMENTS FOUND IN SECTION 11B-703.5 OF TITLE 24. SEE DETAIL
8. AT EVERY DRIVEWAY ENTRANCE SHALL HAVE A SIGN THAT DESIGNATED ACCESSIBLE PARKING STALLS ARE FOR THE USE OF PERSONS WITH DISABILITIES AND DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL COMPLY WITH REQUIREMENTS FOUND IN SECTION 11B-502 OF CBC. SEE DETAILS.

MISC FINISH NOTES

1. ALL CEILING HEIGHT DIMENSIONS MEASURED TO FINISH SURFACES UNLESS NOTED OTHERWISE.
2. EXTEND BASE MATERIAL BEHIND ALL MOVABLE EQUIPMENT AND INTO ALL ALCOVES, KNEESPACES AND SIMILAR AREAS, UNLESS NOTED OTHERWISE.
3. WHEN COUNTERTOP SPLASH IS REQUIRED, EXTEND SPLASH ON SIDES WHERE COUNTER JOINS ADJACENT WALL SURFACE UNLESS NOTED OTHERWISE.
4. ALL INTERIOR FINISHES SHALL COMPLY WITH CHAPTERS 8, 16 AND 25, PART 2, TITLE 24, CCR.
5. PROVIDE BACKING PLATES OR BLOCKING BEHIND ALL WALL MOUNTED EQUIPMENT, CASEWORK, AND ACCESSORIES AS REQUIRED FOR POSITIVE ATTACHMENT TO STRUCTURE. SEE INTERIOR DETAILS.
6. SEAL ALL PENETRATIONS OF SOUND RATED PARTITIONS, FLOORS OR CEILING ASSEMBLIES , INCLUDING ELECTRICAL DEVICES, CABINETS AND OTHER ELEMENTS WITH APPROVED RESILIENT SEALANT. SEE SPEC SECTION 07 84 00 FOR STANDARDS AND REGULATORY CRITERIA FOR FIRESTOPPING SYTEMS IN FIRE RATED AND SOUND RATED ASSEMBLIES.
7. ALL GYPSUM WALL BOARD CORNER BEADS TO BE SQUARE NOSE, UNLESS NOTED OTHERWISE.

STRUCTURAL NOTES

1. PROVIDE ALL TEMPORARY SHORING AND BRACING AS REQUIRED FOR ALL DEMOLITION AND NEW WORK AS REQUIRED. ASSUME FULL RESPONSIBILITY FOR REPAIR AND/OR REPLACEMENT OF DAMAGED AREAS, INCLUDING BUT NOT NECESSARILY LIMITED TO, STRUCTURE, FINISHES, EQUIPMENT AND FURNISHINGS IF DAMAGE OF ANY KIND OCCURS AS RESULT OF IMPROPER OR INADEQUATE SHORING OR BRACING.
2. UNLESS SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS, DO NOT CUT OR OTHERWISE MODIFY STRUCTURAL ELEMENTS WITHOUT DIRECTION FROM ARCHITECT. PROVIDE REINFORCEMENT, SUPPORT, TEMPORARY SHORING SATISFACTORY TO THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO CUTTING INTO STRUCTURAL PORTIONS OF ANY BUILDING ELEMENT. PROVIDE ALL CUTTING OF STRUCTURAL ELEMENTS, AND ALL ASSOCIATED REPAIR OR REFINISHING OF ADJACENT SURFACES AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWER DRIVEN PINS IN EXISTING NON-PRE-STRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWER DRIVEN PINS IN EXISTING PRE-STRESSED REINFORCED CONCRETE (POST OR PRE TENSIONED), USE A NON- DESTRUCTIVE METHOD TO LOCATE TENDONS PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
4. PROVIDE TEMPORARY SHORING FOR EXCAVATIONS THAT REMOVE THE LATERAL SUPPORT FROM AN EXISTING BUILDING OR A PUBLIC WAY. PRIOR TO ISSUANCE OF PERMIT, OBTAIN APPROVAL FROM THE ENFORCING AGENCY FOR EXCAVATIONS ADJACENT TO A PUBLIC WAY.
5. OBTAIN NECESSARY PERMITS, INCLUDING CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT FOR ALL TRENCHING.

FIRE WATCH

A FIRE WATCH IS INTENDED AS A TEMPORARY ALTERNATE TO A FIRE PROTECTION/LIFE SAFETY SYSTEM AND ALLOWS A BUILIDNG TO BE TEMPORARILY OCCUPIED WHILE THE FIRST PROTECTION SYSTEM IS OUT OF SERVICE. THE FIRE DEPARTMENT AND FIRE CODE OFFICIAL TO BE NOTIFIED IMMEDIATELY AND THE SCHOOL DISTRICT TO ESTABLISH A FIRE WATCH PER DSA IR F-2.

ABBREVIATIONS

AB.	ANCHOR BOLT
ABV.	ABOVE
ASST.	ASSISTANT
ACOUS.	ACOUSTICAL
AP.	ACOUSTICAL PANEL
A.C.T.	ACOUSTICAL CEILING TILE
A.D.	AREA DRAIN
ADD.	ADDITIONAL
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISHED FLOOR
A.F.	ABOVE FINISH
AGGR.	AGGREGATE
ALT.	ALTERNATE
ALUM.	ALUMINUM
AMT.	AMOUNT
ANOD.	ANODIZED
ARCH.	ARCHITECT/ARCHITECTURAL
BD.	BOARD
BTWN.	BETWEEN
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
B.M.	BENCH MARK
BOT.	BOTTOM
C&G	CURB AND GUTTER
C/C	CENTER TO CENTER
CAB.	CABINET
CBC.	CALIFORNIA BUILDING CODE
CCR.	CALIFORNIA CODE OF REGULATIONS
C.C.W.	COUNTER CLOCKWISE
CER.	CERAMIC
C.T.	CERAMIC TILE
C.I.P.	CAST IN PLACE
C.J.	CONSTRUCTION JOINT
CL	CENTER LINE
CLG.	CEILING
CLG. DIFF.	CEILING DIFFUSER
CLG. HT.	CEILING HEIGHT
CLG. REG.	CEILING REGISTER
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEANOUT
COL	COLUMN
COMBO.	COMBINATION
CONC.	CONCRETE
CONF.	CONFERENCE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS/CONTINUATION
COORD.	COORDINATE
CORR.	CORRIDOR
C.P.	CONCRETE PIPE
CTV	CABLE TELEVISION
C.W.	COLD WATER
DEMO.	DEMOLITION
DEPT.	DEPARTMENT
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIFF.	DIFFERENCE
DIM.	DIMENSION
DIV.	DIVISION
DN.	DOWN
D.S.	DOWNSPOUT
DTL.	DETAIL
DWG.	DRAWING
D/W	DISHWASHER
D.	DRYER
(E)	EXISTING
E.	EAST
E.J.	EXPANSION JOINT
ELEV.	ELEVATION
ELAST.	ELASTOMERIC
ELEC.	ELECTRICAL
EMERG.	EMERGENCY
ENGR.	ENGINEER
EQ.	EQUALLY SPACED
EQUIP.	EQUIPMENT
EST.	ESTIMATE
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
F.F.	FINISH FLOOR
F/F	FACE TO FACE
F.A.	FIRE ALARM
F.A.C.P.	FIRE ALARM CONTROL PANEL
F.D.	FLOOR DRAIN
F.D.C.	FIRE DEPARTMENT CONNECTION
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.	FIRE HYDRANT
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH
F.F.	FINISH FLOOR
FIN.GR.	FINISH GRADE
FIXT.	FIXTURE
FLR.	FLOOR/FLOORING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.P.	FACE OF PLYWOOD/ SHEATHING
F.O.S.	FACE OF STUD
F.P.M.	FEET PER MINUTE
FRT	FIRE RETARDANT TREATED
FSTNR.	FASTENER
FT.	FOOT
FTG.	FOOTING
FURR.	FURRING
F.R.	FIRE RATED
G.	GAS
GA.	GAUGE
GAL.	GALLON
GALV.	GALVANIZED
GL.	GLASS
GLU-LAM	GLUE LAMINATED
GND.	GROUND
GOV'T.	GOVERNMENT
GYP.	GYPSUM
GYP. BD	GYPSUM BOARD
H.	HIGH
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HDR.	HEADER
HDWR.	HARDWARE
HGR.	HANGER
HT.	HEIGHT
HM.	HOLLOW METAL
HORIZ.	HORIZONTAL
HP.	HORSEPOWER
HR.	HOUR
HVAC	HEATING, VENTILATION, AIR CONDITIONING
H.W.	HOT WATER
ICC	INTERNATIONAL CODE COUNCIL
I.D.	INSIDE DIAMETER
ILLUM.	ILLUMINATION
IN.	INCH
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
ISO.	ISOMETRIC
JAN.	JANITOR
JB.	JUNCTION BOX
JT.	JOINT
L.	LEFT
LAV.	LAVATORY
LB.	POUND
LDR.	LEADER
L.F.	LINEAR FOOT
L.H.	LEFT HAND
LIN.	LINEAR
LOC.	LOCATION
LONG.	LONGITUDINAL
LT.	LIGHT
LT. WT.	LIGHTWEIGHT
LVR	LOUVER
MACH RM.	MACHINE ROOM
MAINT.	MAINTENANCE
MAN.	MANUAL
MAS.	MASONRY
MAT.	MATERIAL
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MED.	MEDIUM
MTL.	METAL
MEZZ.	MEZZANINE
MANUF.	MANUFACTURER
M.H.	MANHOLE
M.O.	MASONRY OPENING
MGR'S	MANAGERS
MPH	MILES PER HOUR
MULL.	MULLION
MULT.	MULTIPLE
N.	NORTH
N/A	NOT APPLICABLE
NAT.	NATURAL
NEG.	NEGATIVE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.R.C.	NOISE REDUCTION COEFFICIENT
N.T.S.	NOT TO SCALE
O/O	OUT TO OUT
OA.	OVERALL
OBSC.	OBSCURE
O.C.	ON CENTER
OD.	OUTSIDE DIAMETER
O.D.	OUTSIDE DIMENSION
O.F.C.I.	OWNER FURNISHED-CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED- OWNER INSTALLED
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPP.	OPPOSITE
O.R.D.	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
OZ.	OUNCE
PAR.	PARALLEL
PERF.	PERFORATED
PERIM.	PERIMETER
PERM.	PERMANENT
PERP.	PERPENDICULAR
PKG.	PACKAGE
PL	PROPERTY LINE
PLAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
PR.	PAIR
PREFAB.	PREFABRICATED
PREFIN.	PREFINISHED
PRELIM.	PRELIMINARY
PREP.	PREPARATION
PROJ.	PROJECT
PROP.	PROPERTY
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.V.C.	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
PWR.	POWER
QTR.	QUARTER
QTY.	QUANTITY
RAD.	RADIUS
RANGE	STOVETOP/ OVEN
RD.	ROAD
RECD.	RECEIVED
RECPT.	RECEPTACLE
RECT.	RECTANGULAR
REF.	REFERENCE
REINF.	REINFORCED/REINFORCING
REM.	REMOVABLE
REQD.	REQUIRED
RESIL.	RESILIENT
RESTRM.	RESTROOM
R.H.	RIGHT HAND
RM.	ROOM
R.O.	ROUGH OPENING
R.O.W.	RIGHT OF WAY
R.W.C.	RAIN WATER CONDUCTOR
R.W.L.	RAIN WATER LEADER
S	SOUTH
SA.	SUPPLY AIR
SALV.	SALVAGE
SAN.	SANITARY
S.B.	SPLASH BLOCK
S.C.	SOLID CORE
SCHED.	SCHEDULE
S.D.	STORM DRAIN
SEC.	SECOND
SECT.	SECTION
SGL.	SINGLE
SHO.	SHOWER
SHT.	SHEET/SHEETING
SHTNG.	SHEATHING
SIM.	SIMILAR
S.M.	SHEET METAL
SP.	SPECIAL
SPEC.	SPECIFICATION, SPECS.
SPKLR.	SPRINKLER
SPKR.	SPEAKER
SQ.	SQUARE
S.S.	STAINLESS STEEL
ST.	STREET
STA.	STATION
STAGG.	STAGGERED
S.T.C.	SOUND TRANSMISSION CLASS
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
S.W.P.P.P.	STORM WATER POLLUTION PREVENTION PLAN
SYM.	SYMBOL
SYS.	SYSTEM
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN.	TANGENT
T.B.	TOP OF BEAM
T.D.	TRENCH DRAIN
TECH.	TECHNICAL
TEL.	TELEPHONE
TEMP.	TEMPERATURE
T.	TEMPERED
THK.	THICKNESS
THRU.	THROUGH
T.O.C.	TOP OF CONCRETE
T.O.G.	TOP OF GYPCRETE
T.O.S.	TOP OF SHEATHING
T.O.P.	TOP OF PARAPET
T.O.PLATE	TOP OF PLATE
TRANS.	TRANSPARENT
TOW.	TOP OF WALL
THRESH.	THRESHOLD
UNFIN.	UNFINISHED
UNIF.	UNIFORM
U.O.N.	UNLESS OTHERWISE NOTED
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VEST.	VESTIBULE
VOL.	VOLUME
W	WASHER
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
W/C	WATER CLOSET
WD.	WOOD
W/D	WASHER/ DRYER STACKED
WHTR.	WATER HEATER HOT H_20
W.P.	WATERPROOF
W.R.	WATER RESISTANT
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC
YD.	YARD

MASTER KEYNOTE LIST

09 24 00.01	PATCH AND REPAIR EXISTING CEMENT PLASTER AT NEW FIRE ALARM PULL BOX AS REQUIRED.
32 13 13.01	SAW CUT AND PATCH (E) CONCRETE FOR NEW CONDUIT DUCT BANK, REFER TO FIRE ALARM SITE PLAN FOR CONDUIT INFORMATION. REFER TO DETAIL 2/A-101 FOR CONCRETE PATCHING.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

DSA

CONSULTANT

LICENSED ARCHITECT
KEITH A. PITTSFORD
No. C-20589
REN. JUL 31, 25
STATE OF CALIFORNIA

STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

GENERAL NOTES / KEYNOTES

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

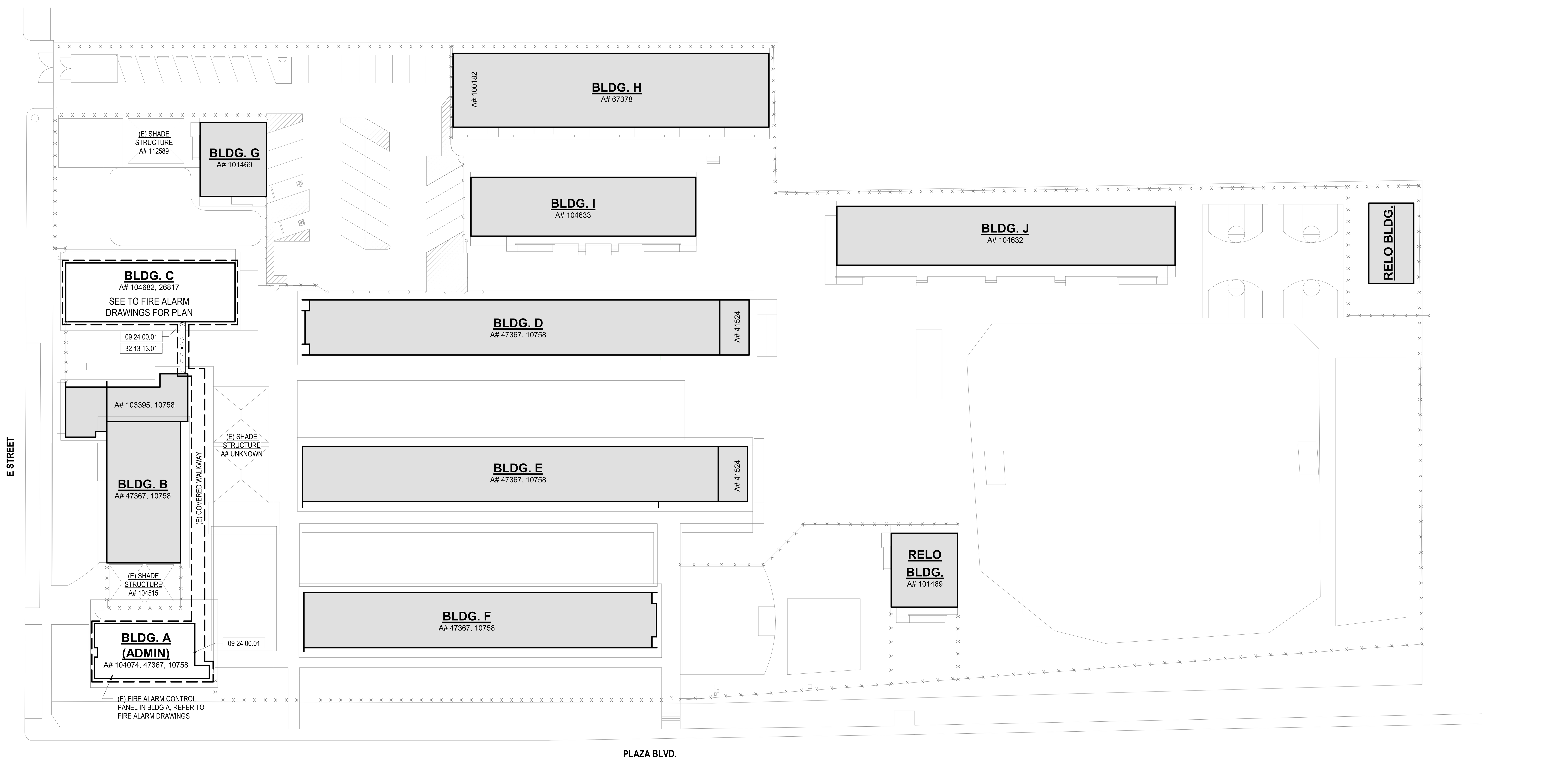
SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

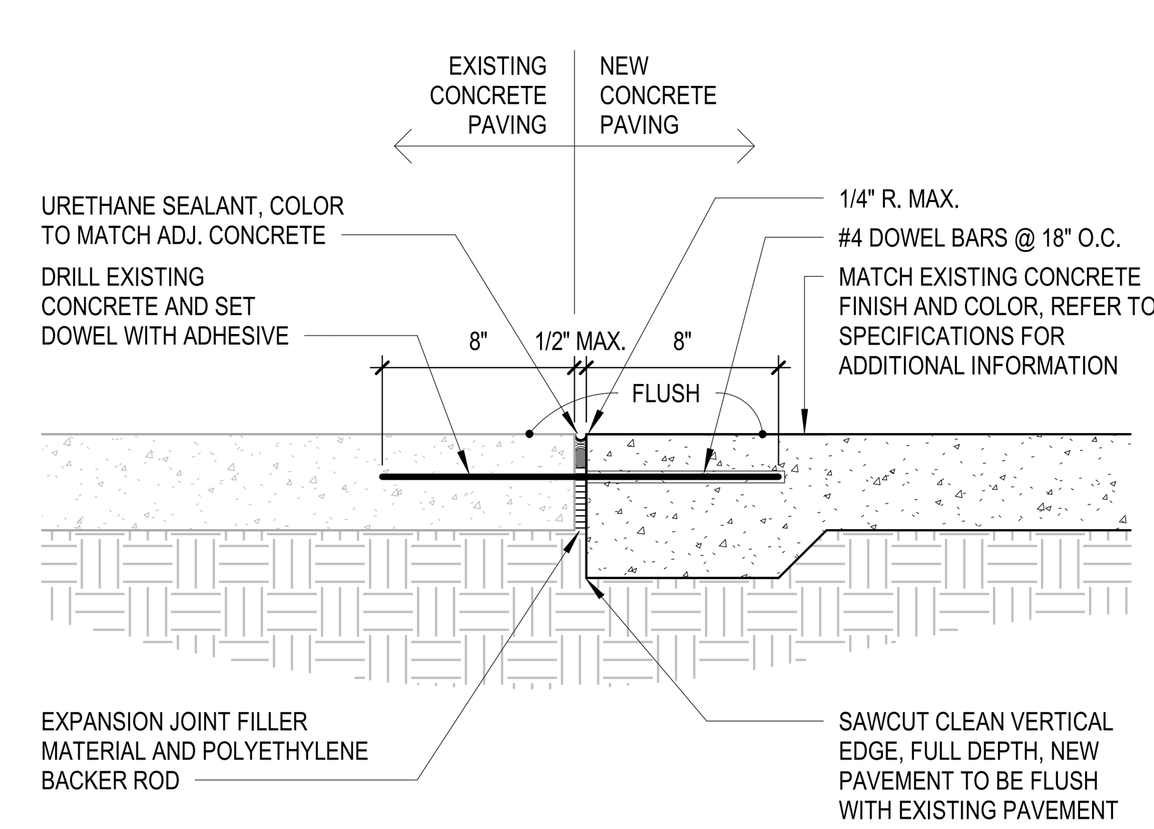
PROJECT NO. 22341-E-02

SHEET NO.

TS-2



SITE PLAN SCALE: 1" = 30'-0" (1)



NEW TO EXIST. CONC. PAVING SCALE: 1 1/2" = 1'-0" (2)

ACCESSIBILITY NOTES

1. PATH OF TRAVEL (P.O.T.) UPGRADES NOT REQUIRED PER 2022 CBC 11B-202.4 EXCEPTION 7:

   "PROJECTS CONSISTING ONLY OF HEATING, VENTILATION, AIR CONDITIONING, REROOFING, ELECTRICAL WORK NOT INVOLVING PLACEMENT OF SWITCHES AND RECEPTACLES, COSMETIC WORK THAT DOES NOT AFFECT ITEMS REGULATED BY THIS CODE, SUCH AS PAINTING, EQUIPMENT NOT CONSIDERED TO BE A PART OF THE ARCHITECTURE OF THE BUILDING OR AREA, SUCH AS COMPUTER TERMINALS AND OFFICE EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH SECTION 11B-202.4 UNLESS THEY AFFECT THE USABILITY OF THE BUILDING OR FACILITY.

KEYNOTES

09 24 00.01	PATCH AND REPAIR EXISTING CEMENT PLASTER AT NEW FIRE ALARM PULL BOX AS REQUIRED.
32 13 13.01	SAW CUT AND PATCH (E) CONCRETE FOR NEW CONDUIT DUCT BANK, REFER TO FIRE ALARM SITE PLAN FOR CONDUIT INFORMATION. REFER TO DETAIL 2/A-101 FOR CONCRETE PATCHING.

LEGEND

BLDG A A#	BUILDING IDENTIFICATION DESIGNATION
(light grey fill)	BUILDING NOT IN SCOPE
(dark grey fill)	BUILDINGS IN SCOPE
(dashed line)	LIMIT OF WORK

GENERAL NOTES

1. REFER TO ELECTRICAL / FIRE ALARM SITE PLAN FOR PANELS, CONDUIT ROUTING AND SUPPLEMENTAL EQUIPMENT.
2. NO SITEWORK IN SCOPE EXCEPT AS SHOWN FOR ROUTING CONDUIT.
3. ALL EXISTING PARKING TO REMAIN AND IS NOT PART OF SCOPE.
4. SITE IS NOT LOCATED WITHIN A WILDLAND URBAN INTERFACE AREA.
5. COORDINATE WITH DISTRICT PRIOR TO ANY WORK PERFORMED IN LANDSCAPE AREA.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

DSA

CONSULTANT

LICENSED ARCHITECT
No. C-20589
REN. JUL 31, 25
STATE OF CALIFORNIA

STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

SITE PLAN

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
A-101

Autodesk Docs://Central ES /Central ES - Fire Alarm.rvt
12/19/2024 9:12:26 AM

SYMBOLS & LEGENDS

ANNOTATION

SD F J X X X — SOLID SYMBOL WITH "X" INDICATES CONDUIT, DEVICE, OR EQUIPMENT EXISTING TO REMAIN IN PLACE.

SD F J — DASHED SYMBOL INDICATES CONDUIT, DEVICE, OR EQUIPMENT TO BE REMOVED.

SD F J — SOLID SYMBOL INDICATES NEW PROPOSED CONDUIT, DEVICE, OR EQUIPMENT.

F J — SURFACE MOUNT BOX FOR ITEM SHOWN.

F J — RECESSED MOUNT BOX FOR ITEM SHOWN.

A — CONDUIT CABLE TAG.

1 — SHEET SPECIFIC REFERENCE.

1 / FA101 — DETAIL CALLOUT REFERENCE:
UPPER SECTION INDICATES DETAIL NUMBER DESIGNATOR
LOWER SECTION INDICATES SHEET REFERENCED TO

1 / FA101 — SECTION CALLOUT REFERENCE:
UPPER SECTION INDICATES REFERENCE DESIGNATOR
LOWER SECTION INDICATES SHEET REFERENCED TO

46" — MOUNTING HEIGHT ABOVE FINISHED FLOOR OR GRADE TO CENTER OF DEVICE.

EQUIPMENT AND DEVICES

- CONDUIT CONCEALED IN WALL OR CEILING.
- CONDUIT CONCEALED UNDERGROUND.
- CONDUIT RUN EXPOSED.
- G — GROUNDING CONDUCTOR.
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.
- CONDUIT CHANGE IN HORIZONTAL ELEVATION.
- CONDUIT TERMINATED AND CAPPED.
- CONDUIT CONTINUATION.
- DEMOLISH CONDUIT OR DUCTBANK BELOW FLOOR OR GRADE. PATCH SURFACES TO MATCH EXISTING.
- J — JUNCTION BOX WALL.
- PULL BOX.
- HA-1,3 — HOMERUN TO PANELBOARD WITH PANEL AND CIRCUIT INDICATION.
- SURFACE RECESSED — PANELBOARD.
- SURFACE RECESSED — TERMINAL CABINET.

SEQUENCE OF OPERATIONS MATRIX

ACTION	DEVICES	
	SMOKE/HEAT DETECOTORS	AC POWER FAILURE
SOUND ALARM AT FACP	YES	YES
ACTIVATE RELAY FOR OFF-SITE MONITORING	YES	YES
SOUND TROUBLE BUZZER AT FACP	ON WIRING FAULT	YES
ANNUNCIATE AT FACP	YES	YES
ACTIVE HORNS AND VISUALS	YES	NO

FIRE ALARM DEVICE LEGEND

NOTES: DEVICE CATALOG NUMBERS INDICATED ARE FOR GAMEWELL/FCI UNLESS OTHERWISE NOTED.

SYMBOL	DESCRIPTION	MOUNTING/BACKBOX/RING
	EXISTING FIRE ALARM/VOICE CONTROL PANEL MANUFACTURER: FCI MODEL: E3	
	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY – SNAC MANUFACTURER: GAMEWELL FCI MODEL: GFPS-6 CSFM #: 7300-1703:0167	SPECIAL BACKBOX SUPPLIED BY STANDARD ELECTRONICS MTD. AT 72" TO TOP (TYPICAL) 15"H X 14.25"W X 2.75"D
SD	ADDRESSABLE SMOKE DETECTOR CEILING MOUNTED MANUFACTURER: SYSTEM SENSOR MODEL: 2WTA-B/B501 BASE/TR300 TRIM RING CSFM #: 7272-1653:0164	4 SQUARE DEEP BOX WITH 3-0 RING MOUNT 3' AWAY FROM ANY AIR MOVEMENT SYSTEMS
H	RATE OF RISE HEAT DETECTOR CEILING MOUNTED MANUFACTURER: SYSTEM SENSOR MODEL: 5351RB/5601P BASE CSFM #: 7270-1653:0509	4 SQUARE DEEP BOX WITH 3-0 RING
A H	190° ATTIC HEAT DETECTOR MANUFACTURER: SYSTEM SENSOR MODEL: 5351H/5601P BASE CSFM #: 7270-1653:0509	4 SQUARE DEEP BOX WITH 3-0 RING
	STROBE – CEILING MOUNTED MANUFACTURER: COPPER WHEELOCK MODEL: SRWC 35T CSFM #: 7135-0785:0007	4 SQUARE DEEP WITH 2 GANG RING
	HORN/STROBE CEILING MOUNTED MANUFACTURER: COPPER WHEELOCK MODEL: HSWC 34T CSFM #: 7135-0785:0007	4 SQUARE DEEP BOX WITH EXTENSION
(WP) F	HORN WEATHER RESISTANT MANUFACTURER: COOPER WHEELOCK MODEL: HN R WBB BACK BOX CSFM #: 7135-0785:0007	FLUSH MOUNT: 4 SQUARE DEEP BOX WITH EXTENSION SURFACE MOUNT: WBB-R WEATHER PROOF BACKBOX

75CD – REPRESENTS CANDELA INTENSITY
CX – REPRESENTS NAC CIRCUIT NUMBER
SX – REPRESENTS SPEAKER CIRCUIT NUMBER

SD — L1 – REPRESENTS SLC NUMBER

SCOPE OF WORK

1. THIS IS A MODIFICATION TO AN EXISTING FULLY AUTOMATIC FIRE ALARM SYSTEM.
2. FURNISH AND INSTALL A COMPLETE 24 VDC, CLOSED CIRCUIT, MICROPROCESSOR BASED, ELECTRICALLY SUPERVISED, ANNUNCIATED FIRE ALARM SYSTEM AS SPECIFIED HERE ON THESE PLANS. THE SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO ALL CONTROL PANELS, POWER SUPPLIES, SIGNAL INITIATING DEVICES, AUDIBLE AND VISUAL ALARM DEVICES, WIRE, AND ACCESSORIES REQUIRED TO PROVIDE A COMPLETE OPERATING SYSTEM. THE SYSTEM SHALL BE WIRED AS A (CLASS A) SYSTEM FOR ALL CIRCUITS.

ABBREVIATIONS

*NOTE: NOT ALL ABBREVIATIONS LISTED ARE USED ON DRAWINGS.

SYMBOLS	DESCRIPTION
#	NUMBER
A	
A	ATTIC
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
B	
BATT	BATTERY
C	
C	CONDUIT [WITH WIRE]
CBC	CALIFORNIA BUILDING CODE,
CEC	CALIFORNIA ELECTRICAL CODE
CLR	CLEAR/CLEARANCE
CO	CONDUIT ONLY WITH NYLON PULLCORD
CSFM	CALIFORNIA STATE FIRE MARSHALL
D	
DSA	DIVSION OF THE STATE ARCHITECT
E	
EA	EACH
EOL	END OF LINE
EQUIP	EQUIPMENT
EX	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	
FFA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FD	FIRE DAMPER
G	
G	GROUND [SYSTEM COMPONENT]
GND	GROUND [SYSTEM COMPONENT]
H	
H	HEAT DETECTOR
HH	HANDHOLE
J	
JB	JUNCTION BOX
JBOX	JUNCTION BOX
M	
MAX	MAXIMUM
MH	MOUNTING HEIGHT
MIN	MINIMUM
MTG	MOUNTING
N	
NAC	NOTIFICATION APPLIANCE CIRCUIT
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
P	
PB	PULLBOX
PH	PHASE
Q	
QTY	QUANTITY
R	
R	RELOCATED EQUIPMENT
RGS	RIGID GALVANIZED STEEL CONDUIT
S	
SD	SMOKE DETECTOR
SQ	SQUARE
T	
TYP	TYPICAL
U	
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
W	
WP	WEATHERPROOF
X	
X	EXISTING

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024
DSA

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications
CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
No. 17537
Exp. 6/30/26
ELECTRICAL
STATE OF CALIFORNIA
Dec 18, 2024 24191001
STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

GENERAL FIRE ALARM SHEET

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
FA001

PLE: 24191001.01 sec fa001 general fire alarm sheet.dwg LAYOUT: GES - FA001 DATE: 12/18/2024 1:38 PM

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHOWN ON THESE DRAWINGS SHALL BE USED FOR CONSTRUCTION.

   APPLICABLE CODE FOR FIRE ALARM:
   2022 CALIFORNIA BUILDING CODE, TITLE 24 PART 2
   2022 NFPA 72 WITH CSFM AMENDMENTS
   2022 CALIFORNIA FIRE CODE, TITLE 24 PART 9

2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.

3. UPON COMPLETION OF THE SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.

4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.

5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.

6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND / OR TESTING.

7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.

8. WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THAN 6" TO A HORIZONTAL STRUCTURE.

9. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS, 5 DBA MUST BE MAINTAINED.

10. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.

11. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.

12. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.

13. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.

14. ALL FIRE ALARM WIRING SHALL BE FPL OR FPLP (FIRE POWER LIMITED OR FIRE POSER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.

15. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTION DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.

16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.

17. SMOKE DETECTORS SHALL NOT BE CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.

18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.

19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.

20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.

21. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.

22. CONTROL PANELS, REMOTE ANNUNCIATOR SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48".

23. THE INSTALL CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.

24. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.

25. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

DSA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

CONSULTANT

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. 17537
Exp. 6/30/26
ELECTRICAL
STATE OF CALIFORNIA

Dec 18, 2024 24191001

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

FIRE ALARM NOTES

CENTRAL
ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

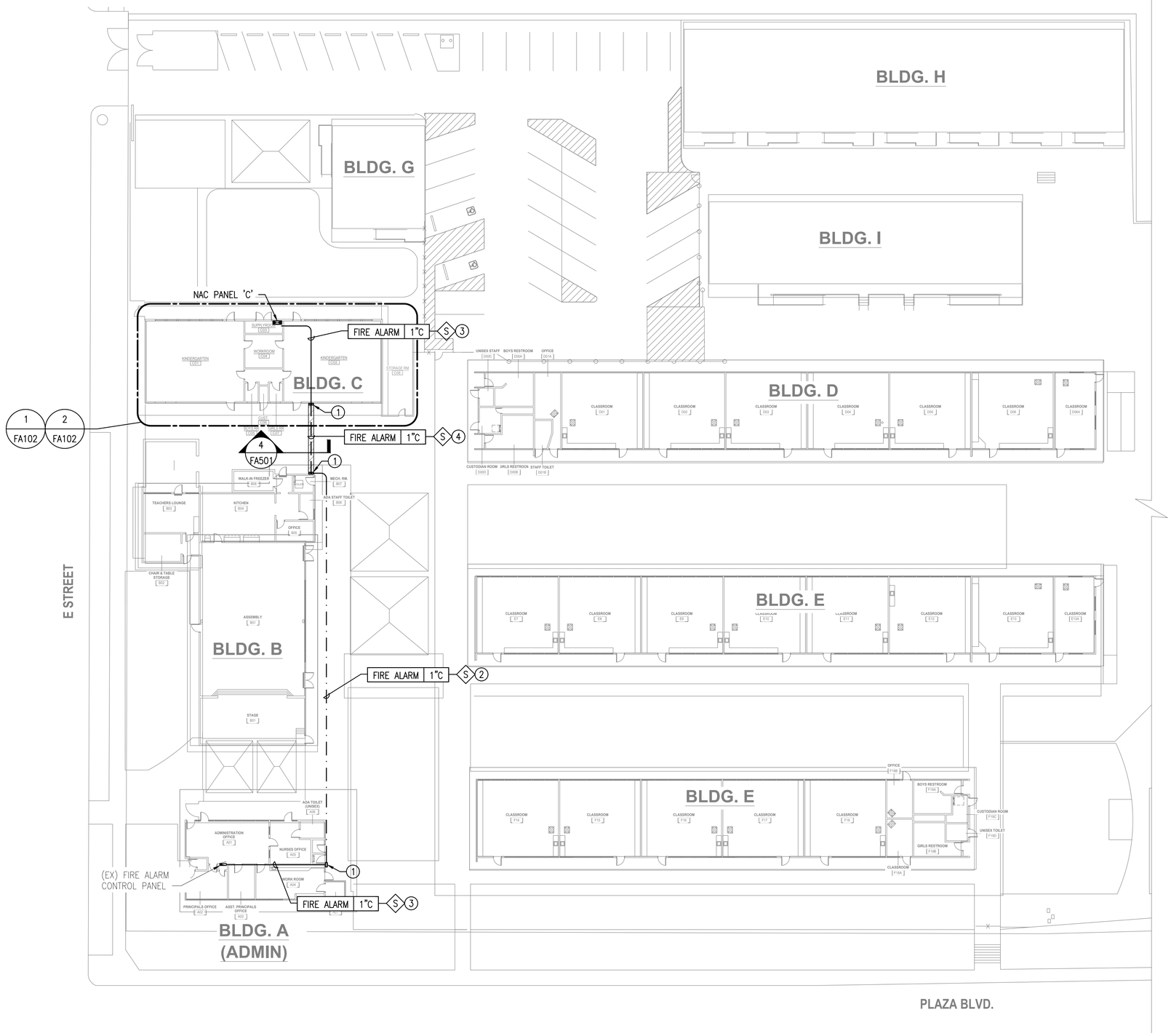
SUBMITTALS / REVISIONS

#	ISSUE	DATE
2	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
FA002

FILE: 24191001.01 ave fa001 general fire alarm sheet.dwg LAYOUT: CES – FA002 DATE: 12/18/2024 1:38 PM



GENERAL NOTES

1. VERIFY EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND HAND DIG IF NECESSARY.
2. EXPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDE 6" SQUARE X 4" DEEP NEMA 3R PULL BOX AND SECURE TO EXTERIOR WALL ABOVE INTERIOR CEILING HEIGHT.
2. PROVIDE AND SECURE CONDUIT TO BOTTOM OF COVERED WALKWAY AT 8'-0" ON CENTER.
3. PROVIDE FIRE ALARM CONDUIT ABOVE EXISTING CEILING. CUT AND PATCH WALLS AND CEILINGS AS REQUIRED BY ARCHITECTS, AS NECESSARY TO INSTALL NEW CONDUITS.
4. SAW CUT AND PATCH EXISTING CONCRETE FOR FIRE ALARM DUCT BANK.

1 / FA101 SITE FIRE ALARM PLAN

SCALE: 1" = 20' - 0"

0' 5' 10' 20' 40'

1" = 20'

N

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DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

DSA

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
No. 17537
Exp. 6/30/26
ELECTRICAL
STATE OF CALIFORNIA

Dec 18, 2024 24191001

STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

SITE FIRE ALARM PLAN

CENTRAL ELEMENTARY SCHOOL

FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91960

SUBMITTALS / REVISIONS

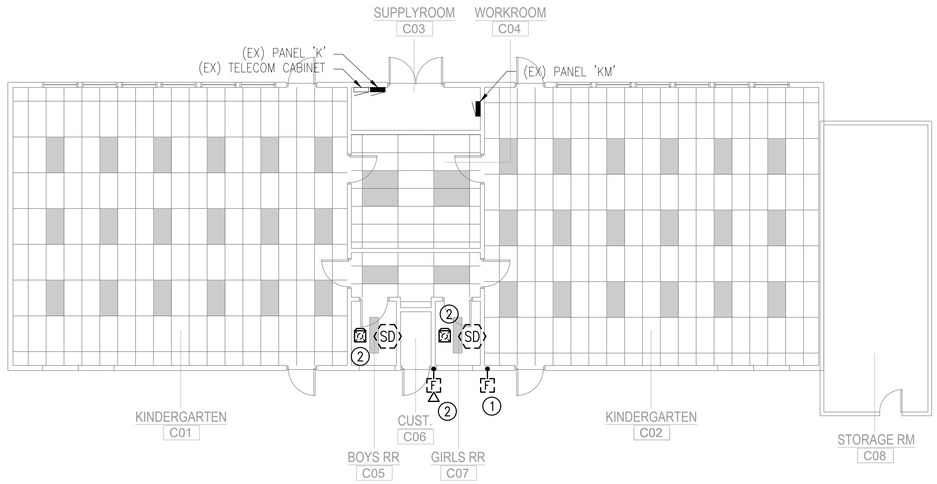
#	ISSUE	DATE
2	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.

FA101

FILE: 24191001.01_cen_fa101_site_fire_alarm_plan.dwg LAYOUT: FA101 DATE: 12/18/2024 1:18 PM



1 FA102

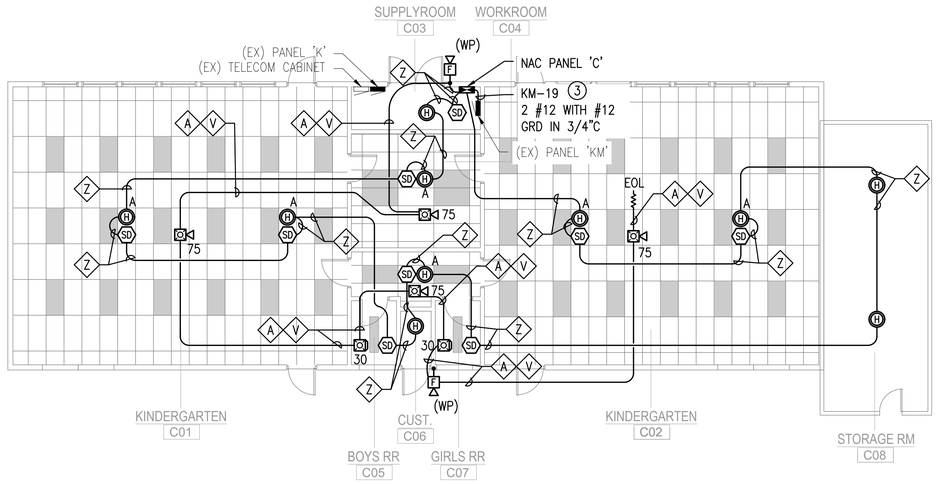
DEMOLITION FIRE ALARM PLAN

SCALE: 1/8" = 1' – 0"

0' 2' 4' 8' 16'

1/8" = 1'–0"

N



2 FA102

NEW FIRE ALARM PLAN

SCALE: 1/8" = 1' – 0"

0' 2' 4' 8' 16'

1/8" = 1'–0"

N

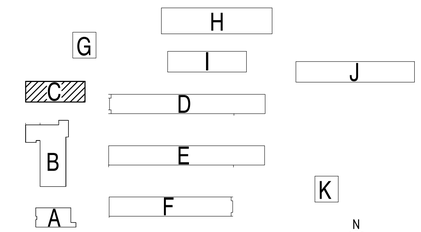
GENERAL NOTES

1. WHERE A DEVICE OR ITEM OF FIRE ALARM EQUIPMENT IS SHOWN TO BE REMOVED, REMOVE THE ENTIRE INSTALLATION INCLUDING DEVICE COVER PLATE AND WIRE UNLESS OTHERWISE INDICATED.
2. WHERE THE STRUCTURE, FINISH, CIRCUIT OR EQUIPMENT IS DAMAGED OR LEFT IN INCOMPLETE OR UNWORKABLE DUE TO THE DEMOLITION WORK, IT SHALL BE PATCHED, REPAIRED, REROUTED, REPLACED OR RELOCATED AS CONDITIONS REQUIRE.

SHEET NOTES

1. DEMOLISH AND REMOVE FIRE ALARM DEVICE AND WIRING BACK TO ORIGIN. EXISTING BACK BOX TO REMAIN. PROVIDE STAINLESS STEEL COVER PLATE ON BACK BOX AND PAINT COVER PLATE TO MATCH EXISTING WALL.
2. DEMOLISH AND REMOVE FIRE ALARM DEVICE, BACK BOX, CONDUIT, AND WIRING BACK TO ORIGIN.
3. PROVIDE 120 VOLT, 1PH, 20AMP CONNECTION FROM EXISTING PANEL 'KM'.

KEY MAP



DSA

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DATE: 12/26/2024

CONSULTANT

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Dec 18, 2024 24191001

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

FIRE ALARM PLANS

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

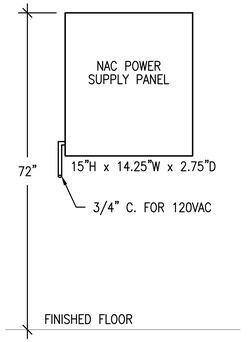
#	ISSUE	DATE
1	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.

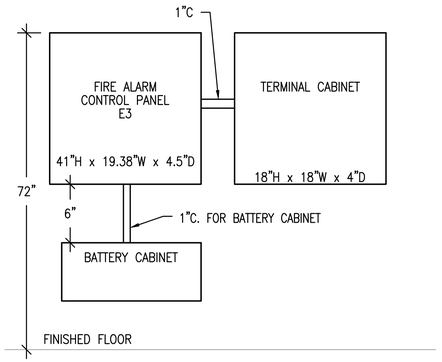
FA102

File: 24191001.01_rac_fa102_fire_alarm_plan.dwg LAYOUT: FA102 DATE: 12/18/2024 1:38 PM



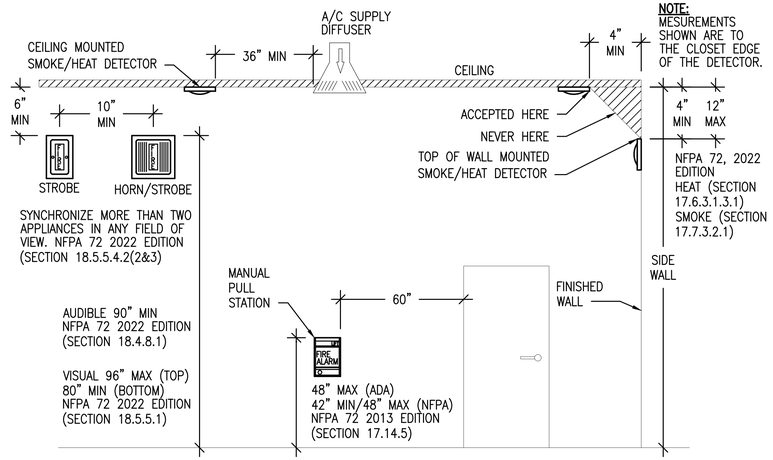
NOTE:
1" MINIMUM DISTANCE BETWEEN PANELS

3 FA501 — NAC PANEL H22 ELEVATION DETAIL
SCALE: NONE

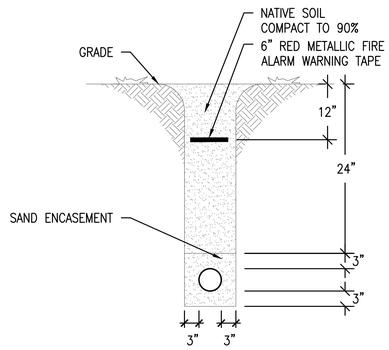


NOTE:
1" MINIMUM DISTANCE BETWEEN PANELS

2 FA501 — EXISTING FACP ELEVATION DETAIL
SCALE: NONE

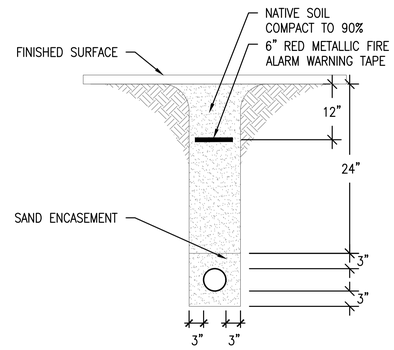


1 FA501 — TYPICAL FIRE ALARM DEVICE ELEVATIONS
SCALE: NONE



NOTE:
REFER TO PLAN(S) FOR SIZE AND QUANTITY OF CONDUITS.

5 FA501 — TYPICAL 'GRADE' DUCT BANK DETAIL
SCALE: NONE



NOTE:
REFER TO PLAN(S) FOR SIZE AND QUANTITY OF CONDUITS.

4 E50# — TYPICAL 'FINISHED SURFACE' DUCT BANK DETAIL
SCALE: NONE

SHEET NOTES

1. PROVIDE NEW BREAKER SIZED AS INDICATED IN EXISTING SPACE. NEW BREAKER SHALL MATCH EXISTING MANUFACTURE TYPE, AIC RATING, AND HAVE RED HANDLE WITH BREAKER LOCK-ON DEVICE.

EXISTING

PANEL: KM VOLTAGE: 208 /120V, 3-PH, 4W AIC: MAIN: 225A/3P M.C.B.
LOCATION: SUPPLY RM MOUNTING: SURFACE BUS: 250

	ITEM	CODE	BKR	CKT	A	B	C	CKT	BKR	CODE	ITEM
	EXISTING H20 LOAD		20/	1				2	20/1		EXISTING LOAD
	SAME AS CIRCUIT ABOVE		/2	3				4	20/1		EXISTING LOAD
	EXISTING LOAD		20/1	5				6	20/1		EXISTING LOAD
	EXISTING LOAD		20/1	7				8	20/1		EXISTING LOAD
	EXISTING LOAD		20/1	9				10	20/1		EXISTING LOAD
	EXISTING LOAD		20/1	11				12	20/1		EXISTING LOAD
	EXISTING LOAD		20/1	13				14	20/1		EXISTING RECEPT
	EXISTING LOAD		20/1	15				16	20/1		EXISTING RECEPT
	EXISTING LOAD		20/1	17				18	20/1		EXISTING RECEPT
1	**FIRE ALARM NAC PANEL 'C'**	**N**	**20/1**	19				20	20/1		EXISTING RECEPT
	BUSSED SPACE			21				22	20/1		EXISTING RECEPT
	BUSSED SPACE			23				24			BUSSED SPACE
	BUSSED SPACE			25				26			BUSSED SPACE
	BUSSED SPACE			27				28			BUSSED SPACE
	BUSSED SPACE			29				30			BUSSED SPACE
	BUSSED SPACE			31				32	50/		EXISTING AC-C1
	BUSSED SPACE			33				34	/		SAME AS CIRCUIT ABOVE
	BUSSED SPACE			35				36	/3		SAME AS CIRCUIT ABOVE
	BUSSED SPACE			37				38	50/		EXISTING AC-C2
	BUSSED SPACE			39				40	/		SAME AS CIRCUIT ABOVE
	BUSSED SPACE			41				42	/3		SAME AS CIRCUIT ABOVE

CIRCUIT CODES: Blank or ***N****: NON-CONTINUOUS* ***K****: KITCHEN* ***L****: LONG-CONTINUOUS* ***M****: MOTOR* ***P****: PANEL* ***R****: DEMANDABLE RECEPT'S* ***U****: UNIT*

CONNECTED VA PER PHASE	0	0	0		DEMAND KVA: 0
TOTAL CONNECTED VA		0			DEMAND AMPS: 0
CONN. VA (CODE N): 0	CONN. VA (CODE R): 0		CONN. VA (CODE M): 0		CONNECTED AMPS: 0
CONN. VA (CODE L): 0	CONN. VA (CODE K): 0				HIGH PH AMPS/LCL: 0

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024
DSA

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications
CONSULTANT

REGISTERED PROFESSIONAL ENGINEER — ELECTRICAL — No. 17537 Exp. 6/30/26 — STATE OF CALIFORNIA
STAMP

Dec 18, 2024 24191001

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

FIRE ALARM DETAILS

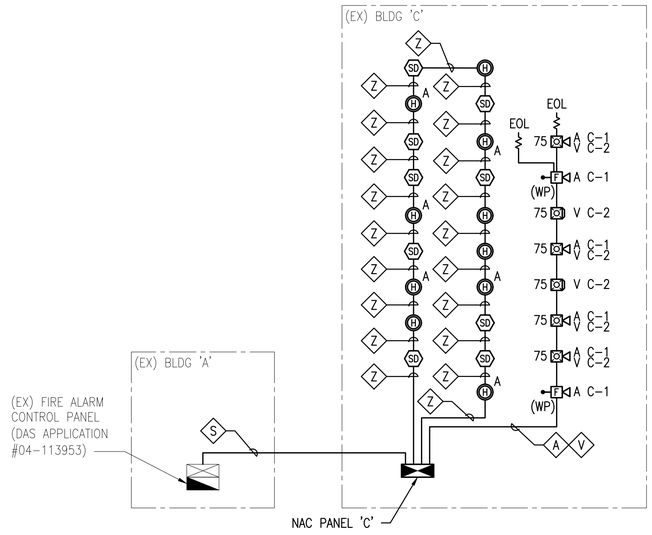
CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
FA501



1 FA601 PARTIAL FIRE ALARM RISER DIAGRAM SYSTEM

SCALE: NONE

FIRE ALARM CABLE SCHEDULE

DES.	DESCRIPTION
A	AUDIO CIRCUIT, (2) #12 THHN
V	VISUAL CIRCUIT, (2) #12 THHN
Z	ADDRESSIBLE LOOP, (1) TWISTED PAIR #16
S	SYNCHRONIZATION LOOP, (2) #12 THHN

FIRE ALARM SYSTEM VOLTAGE DROP AND BATTERY CALCULATIONS

Project Name: **Fire Alarm Repairs Central ES** Date: 10/3/2024
Project Location: **National City, CA**
Project Number: **P:\24191001**
Designer: **REI**

VOLTAGE DROP REFERENCE DATA

% VOLTS DROP = (2 x L x I x R / 24) x 100
where L = one-way circuit length (ft)
I = current (amps)
R = conductor resistance (ohms/ft)
R = K/CM (K=10.8, CM = circ mils)

WIRE RESISTANCE

AWG	CM	OHMS/1000ft
#10	10380	1.04
#12	6530	1.65
#14	4110	2.63

DEVICE CURRENTS

DEVICE	TAG	AMPS	MIN V	QUANT
horns:	horn	0.024	24V	2
strobes:	15 str	0.047	24V	0
	30 str	0.081	24V	2
	75 str	0.128	24V	0
	110 str	0.166	24V	0
combination	15 hs	0.072	24V	0
horns and	30 hs	0.094	24V	0
strobes:	75 hs	0.153	24V	4
	110 hs	0.183	24V	0
misc.	DSM	0.038	24V	0
detector: photoelec.	Ph	0.004	24V	9
heat	He	0.003	24V	10
duct	Du	0.003	24V	0

NOTE: DEVICE QUANTITIES AND CIRCUIT LENGTHS SHOWN FOR DSA PLANCHECK PURPOSES ONLY; VERIFY WITH SITE PLANS, FLOOR PLANS AND FIELD CONDITIONS.

LOOP	SNAC Panel	Horns	Strobe 15 str	30 str	75 str	110 str	Combination 15 hs	30 hs	75 hs	110 hs	Misc DSM	Detectors Ph	He	Du	Total Amps	Wire AWG	Ckt. Length	Volts Loss	% Volt Loss
FACP (MAIN BUILDING):	1																		
INITIATION CIRCUIT													9	10	0	0.066	#14	570	**0.198**	**0.82%**
CIRCUIT #1		2	0	2	0	0	0	0	4	0	0					0.822	#12	200	**0.544**	**2.27%**
CIRCUIT #2		0	0	0	0	0	0	0	0	0	0					0.000	#12		**0.000**	**0.00%**
CIRCUIT #3																0.000	#12		**0.000**	**0.00%**
CIRCUIT #4																0.000	#12		**0.000**	**0.00%**
SUB-TOTAL	1	2	0	2	0	0	0	0	4	0	0	9	10	0	0.888				

STANDBY BATTERY CALCULATIONS

	FACP
TOTAL STANDBY CURRENT (mA)	150
STANDBY CURRENT x 24 HOURS (A-H)	3.600
NOTIFICATION APPLIANCES ALARM CURRENT (mA)	1888
PANEL ALARM CURRENT (mA)	175
TOTAL ALARM CURRENT x 5 MINUTES (A-H)	0.171
SUBTOTAL AMP-HOURS	3.771
20% BATTERY DERATING FACTOR (A-H)	+0.754
TOTAL REQUIRED AMP-HOURS	**4.525**
PROVIDE	**6.0 AH**

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DIV. OF THE STATE ARCHITECT
APP: 04-123919 INC:
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DATE: 12/26/2024
DSA

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications
CONSULTANT

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STATE OF CALIFORNIA
Dec 18, 2024 24191001
STAMP

PREPARED FOR THE BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY SGPA ARCHITECTURE AND PLANNING

FIRE ALARM RISER DIAGRAM SYSTEM

CENTRAL ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
933 E AVE.
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO. FA601

PROJECT MANUAL FOR CONSTRUCTION OF

FIRE ALARM UPGRADES

at

LAS PALMAS ELEMENTARY SCHOOL

1900 E. 18TH STREET
NATIONAL CITY, CA 91950

PREPARED FOR THE:
NATIONAL ELEMENTARY SCHOOL DISTRICT
FACILITIES PLANNING AND CONSTRUCTION
1500 N. AVE.
NATIONAL CITY, CA 91950

PREPARED BY:
SGPA Architecture & Planning
3111 CAMINO DEL RIO NORTH, STUDIO 500
SAN DIEGO, CA 92018

SGPA PROJECT No. 22341-E-02

DSA Backcheck 2

December 26, 2024

SPECIFICATIONS

SECTION 00 00 02 – PROFESSSIONAL LICENSE STAMPS and SIGNATURES

PROJECT

LAS PALMAS ELEMENTARY SCHOOL – FIRE ALARM UPGRADES
1900 E. 18th Street
National City, CA 91950
SGPA Project Number 22341-E-02

OWNER

SAN DIEGO UNIFIED SCHOOL DISTRICT
San Diego, California

ARCHITECT

SGPA Architecture and Planning
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Phone: (619) 297-0131
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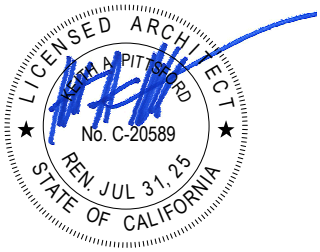

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Dec 18, 2024 24191001

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APP: 04-123922 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

END OF SECTION 00 00 02

SPECIFICATIONS

TABLE OF CONTENTS

TABLE OF CONTENTS

END OF DOCUMENT 00 01 10

SECTION 01 10 00
SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased Construction.
4. Work by District.
5. District-furnished products.
6. Contractor-furnished, District-installed products.
7. Access to site.
8. Coordination with occupants.
9. Work restrictions.
10. Specification and drawing conventions.
11. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of District's facilities.

1.3 PROJECT INFORMATION

A. Project: Central Elementary School – Fire Alarm Upgrades

B. Project Description: Provide new fire alarm design for three portable classroom buildings.

C. Project Location: 1900 E. 18th Street, National City, California 91950.

D. District: National Elementary School District.
1500 N. Ave.
National City, CA 91950.

E. Architect Identification: The Contract Documents, dated 10/09/2024, 2024, DSA SUBMITTAL V1, were prepared for Project by: SGPA Architecture and Planning, 3111 Camino del Rio North, Suite 500, San Diego, California 92108. Attention: Derek Buskirk, (619) 297-0131, dbuskirk@sgpa.com.

1.4 CONTRACT

A. The Project will be constructed under a single prime contract.

1.5 PRECONSTRUCTION DOCUMENT PERIOD

A. The time period of 14 days, starting with the commencement date in the Notice to Proceed, shall be considered the Preconstruction Documentation Period.

1. This time period shall be used for such things a Preconstruction Meeting, submittal deliverables, Schedule of Values, and Baseline Schedule.
2. Nothing else shall be performed at this time without written permission from the District.

1.6 CONTRACT TIME

A. The Work shall be conducted in a single phase, and shall be substantially completed no later than indicated in Supplemental Conditions.

1.7 WORK BY DISTRICT

A. General: Cooperate fully with District so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by District. Coordinate the Work of this Contract with work performed by District.

1.8 DISTRICT-FURNISHED PRODUCTS

A. District will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing District-furnished products and making building services connections, start-up, testing, and demonstration.

B. District-Furnished Products:

1. XXX

C. Provide District Construction Manager 15 days' prior notice of requirements for delivery to site of all District furnished products. Notify District in writing within 7 days of receiving District furnished products of acceptance or rejection of products furnished. District Construction Manager, after receiving notice, will take appropriate action to have District furnished products made acceptable for Contractor's use. Carefully store

and protect from damage rejected District furnished products until District takes appropriate action.

1.9 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to area of work indicated on drawings.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to District, District's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.10 COORDINATION WITH OCCUPANTS

A. Full District Occupancy: District will occupy site and building(s) during entire construction period. Cooperate with District during construction operations to minimize conflicts and facilitate District usage. Perform the Work so as not to interfere with District's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from District and approval of authorities having jurisdiction.
2. Notify District not less than 72 hours in advance of activities that will affect District's operations.

B. District Limited Occupancy of Completed Areas of Construction: District reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Partial Completion for each specific portion of the Work to be occupied prior to District acceptance of the completed Work.
2. Before limited District occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, District will operate and maintain mechanical and electrical systems serving occupied portions of Work.
3. On occupancy, District will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.11 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to hours indicated in General Conditions . Exceptions to these hours include utility shutdowns and noisy activity.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by District or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify District not less than seven days in advance of proposed utility interruptions.
2. Obtain District's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate with District operations that may result in high levels of noise and vibration, odors, or other disruption to District occupancy or neighboring properties.

1. Notify District not less than seven days in advance of proposed disruptive operations.
2. Obtain District's written permission before proceeding with disruptive operations.

E. Controlled Substances: Use of tobacco products and other controlled substances on District property is not permitted.

1.12 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 21 00
ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Related Requirements:

1. Section 01 39 00 “Project Forms” for Allowance Payment Record form.

1.3 DEFINITIONS

A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to perform services or defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order (CO).

1.4 ACTION SUBMITTALS

A. Submit proposals for purchase of products, systems, or services included in allowances, in the form specified.

1.5 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

1.6 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 ALLOWANCES

A. Use allowance only as directed by District for District's purposes and only by APRs that indicate amounts to be charged to the allowance.

B. Prepare documents for use of Allowances and Contractor Contingency pursuant to "Adjustment to Guaranteed Maximum Price (GMP) and Contract Time on Account of Changes to the Work" and "Change Orders" sections of Exhibit G to the Master Facilities Lease (General Conditions) and Attachment 1 to Exhibit G ("Payment – Extra, Additional, Deleted Work, Allowances, or Contractor Contingencies").

C. Allowance includes cost of materials, equipment, delivery, receiving, handling, labor, installation, warranty, and insurance. Contractor's supervision, overhead, profit and bond costs to be determined at time of use.

D. At Project closeout, credit unused amounts remaining in the allowance to District by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: For unforeseen conditions, as directed by District. Include a lump sum allowance of $26,250.00**.**

END OF SECTION 01 21 00

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 01 21 00 "Allowances" for products selected under an allowance.
2. Divisions 02 through 33 Sections for specific product and manufacturer requirements and for limitations on substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Substitutions include “or equal” products.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at the end of this Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by District and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and Districts.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or sevendays of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Submit requests for substitution not later than 35 days after the Notice to Proceed.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

REQUEST FOR SUBSTITUTION

Re: _____ _____
Section # Project Name

_____ _____
Date Item

To: _____
Architect

From: _____
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	_____	_____
	_____	_____
Phone Number	_____	_____
3. Product Cost	_____	_____
Installation/Labor Cost	_____	_____
4. Delivery Time	_____	_____
Installation Time	_____	_____
5. Product Characteristics	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
6. Dimensions	_____	_____
Effects	_____	_____
7. Guarantee/Warranty	_____	_____
8. CBC-ES 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.

D. Similar Projects

1. _____ _____
Name Date

_____
Address

2. _____ _____
Name Date

_____
Address

E. Maintenance Service/Parts:

Name: _____

Address: _____

What effect does this substitution have on applicable code requirements?

_____

_____

G. Changes to Drawings and Specifications:

Attach information completely describing changes to be made to drawings and specifications.

- Contractor hereby certifies equal performance and assumes of liability for equal performance.
- Contractor hereby agrees to pay for all costs involved with changing the building design, including engineering, drafting, specifications editing, coordination, and preparation of detailed cost estimates, caused by the proposed substitution.

Submitted by:

_____ _____
Signature Printed Name

_____
Title

_____ _____
Company Date

_____
Address

_____
Address

_____ _____

Telephone Email

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

For Use by District's Representative:

District's Design Consultant Date:_____	**School District** Date:_____
☐ Accepted ☐ Not Accepted	☐ Accepted ☐ Not Accepted
By (print): _____	By (print): _____
Title: _____	Title: _____
Signature: _____	Signature: _____

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including the following:

1. Document Control Software.
2. General coordination procedures.
3. Administrative and supervisory personnel.
4. Coordination drawings.
5. RFIs.
6. Project meetings.

B. Related Requirements:

1. Section 01 32 01 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 01 39 00 “Project Forms” for applicable project forms.
3. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
4. Section 01 74 19 “Construction Waste Management and Disposal” for procedures for managing construction waste materials.
5. Section 01 77 00 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Contractor seeking information required by or clarifications of the Contract Documents.

B. District Construction Manager: District Construction Manager is General Contractor’s sole point of contact for all communications with District. Direct all District communications to District Construction Manager. District Construction Manager shall disseminate communications to appropriate District personnel as necessary.

C. Document Control Software: The District has implemented a computerized web-accessed document management and control system for the Project referred to herein as Document Control Software. Use this system for all Project Submittals and RFI's.

The District will provide Contractor personnel with access, support, and training in the use of the Document Control Software at no cost to the Contractor.

The Document Control Software includes the following functions:

1. Project directory;
2. Project correspondence;
3. Meeting minutes;
4. Contract modification forms and logs;
5. RFI forms and logs;
6. Task and issue management;
7. Photo documentation;
8. Schedule and calendar management;
9. Submittal forms and logs;
10. Payment application forms;
11. Drawing and specification document hosting, viewing, and updating;
12. Online document collaboration;
13. Reminder and tracking functions;
14. Archiving functions.

1.4 INFORMATIONAL SUBMITTALS

A. Key Personnel Names: Within ten (10) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, in prominent location in each built facility, and by each temporary telephone. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for District and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities, including those of the District and separate contractors, to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. **Co**ordinate management and recycling of solid waste generated from construction activities. Refer to Section 01 74 19 “Construction Waste Management and Disposal” for tracking, management and recycling requirements for construction activities related waste.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, prepare and submit an RFI using the District’s Document Control Software. Immediately notify the District Construction Manager, Project Inspector, District Project Manager, Architect, and Document Controls Specialist of all RFIs submitted.

1. Architect will return RFIs submitted by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. RFI number, numbered sequentially (for revised RFIs, keep the original RFI number, but add an R1, R2, etc. as a suffix.)
3. Date of RFI Question.
4. Name of Contractor, as well as name of individual from Contractor submitting the RFI.
5. Name of Architect.
6. RFI subject.
7. Detailed description of item needing information or interpretation.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution, if any. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: See Section 01 39 00 “Project Forms” for RFI form. This form will be generated electronically by the Document Control Software from the Contractor’s input data.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five (5) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day. Incomplete RFIs or inaccurately prepared RFIs will be returned without action.

    1. RFIs will be returned without action if they are used for any purpose other than a request for information. Such uses include:

        a. Requests for approval of submittals.
        b. Requests for approval of substitutions.
        c. Requests for approval of Contractor's means and methods.
        d. Requests for coordination information already indicated in the Contract Documents.
        e. Requests for adjustments in the Contract Time or the Contract Sum.
        f. Requests for interpretation of Architect's actions on submittals.

    2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

E. RFI Log: The Document Control Software will generate an RFI Log. The Log will be brought to each weekly Project meeting by the District Construction Manager.

1.7 PROJECT MEETINGS

A. General: Attend all project meetings. District Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: District Construction Manager will inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Minutes: District Construction Manager will record meeting results.

B. Preconstruction Conference: District Construction Manager will schedule a preconstruction conference before starting construction, at a time convenient to District, but no later than fourteen (14) days after execution of the Notice to Proceed.

1. District Construction Manager will conduct the conference to review responsibilities and personnel assignments.
2. Attendees: Authorized representatives of District, District's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress. Include the following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communications.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFIs.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. Preparation of record documents.
m. Use of the premises and existing buildings.
n. Work restrictions.
o. Working hours.
p. District's occupancy requirements.
q. Responsibility for temporary facilities and controls.
r. Procedures for moisture and mold control.
s. Procedures for disruptions and shutdowns.
t. Construction waste management and recycling.
u. Parking availability.
v. Office, work, and storage areas.
w. Equipment deliveries and priorities.
x. First aid.
y. Security.

z. Progress cleaning.
aa. Request for Substitution procedures.
bb. Use of District's Document Control Software for RFIs.

4. District Construction Manager will record meeting results and distribute them to all parties in attendance within two (2) days of meeting.

C. Project Closeout Conference: District Construction Manager will schedule and conduct a project closeout conference, at a time convenient to District and Architect, but no later than thirty (30) days prior to the scheduled date of Substantial Completion.

1. Conference will be conducted to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of District, District's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout including the following:

a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for preparing operations and maintenance data.
e. Requirements for delivery of additional stock and spare parts.
f. Requirements for demonstration and training.
g. Preparation of Contractor's punch list.
h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
i. Submittal procedures.
j. The District's partial occupancy requirements.
k. Installation of the District's furniture, fixtures, and equipment.
l. Responsibility for removing temporary facilities and controls.

4. Minutes: District Construction Manager will record meeting results and distribute to all parties in attendance within two (2) days of meeting.

D. Progress Meetings: District Construction Manager will conduct Project Progress Meetings at weekly intervals. Project Progress Meetings are in addition to specific meetings held for other purposes, such as Schedule Review Meetings.

1. Attendees: In addition to representatives of District and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: District Construction Manager will review minutes of previous progress meeting. District Construction Manager will review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

   a. Schedule Updating: Revise Look-Ahead Schedule prior to each Progress Meeting. Send (by Email) the revised Look-Ahead Schedule to the District Construction Manager no later than 24 hours before the next Progress Meeting. The Look-Ahead Schedule shall be submitted in PDF electronic file format using computer software acceptable to District Construction Manager.
   b. Review present and future needs of each entity present including:

      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Site utilization.
      8) Temporary facilities and controls.
      9) Work hours.
      10) Progress cleaning.
      11) Quality and work standards.
      12) Status of correction of deficient items.
      13) Field observations.
      14) Status of RFIs.
      15) Status of proposal requests.
      16) Pending changes.
      17) Status of Change Orders.
      18) Documentation of information for payment requests.

3. Minutes: District Construction Manager will record meeting results and distribute to all parties in attendance within two (2) days of the meeting.

E. Monthly Schedule Review Meetings: See Section 01 32 01 “Construction Progress Documentation.”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 31 10
CONTRACTOR PERSONNEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes Contractor personnel to be assigned to this Project.

B. Related Requirements:

1. Section 01 31 00 “Project Management and Coordination” for project management procedures.

2. Section 01 32 01 “Construction Progress Documentation” for scheduler requirements.

1.3 KEY CONTRACTOR PERSONNEL

A. Contractor shall assign the following minimum personnel to the project:

1. Contractor Project Manager: Part time on-site.
2. Contractor Project Superintendent: Part Time on-site.

1.4 REQUIREMENTS FOR KEY PERSONNEL

A. Contractor Project Manager shall have a minimum of five years experience as Project Manager or Superintendent on projects of similar size and scope.

B. Contractor Superintendent shall have a minimum of five years experience as Superintendent on projects of similar size and scope.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

SPECIFICATIONS

END OF SECTION 01 31 10

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.

B. Related Requirements:

1. Section 01 33 00 "Submittal Procedures" for submitting photographic documentation.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Include same information as corresponding photographic documentation.

B. Color Digital Photographs: Submit image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name of Contractor.
c. Date photograph was taken.
d. Description of location, vantage point, and direction (by compass point), and elevation or story of construction.
e. Unique sequential identifier keyed to accompanying key plan.

C. Video Recording: At the Contractor's option, provide video recording in lieu of photographs specified in paragraph, "Preconstruction Photographs." Submit one copy in digital video disc format acceptable to District.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name of Contractor.
c. Date videotape was recorded.

1.4 USAGE RIGHTS

A. If a professional photographer is engaged to take photographs or video recordings, obtain and transfer copyright usage rights from photographer to District for unlimited reproduction of photographic documentation.

1.5 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in both RAW and JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to District.

1.6 PHOTOGRAPHS

A. General: Take color photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.

C. Preconstruction Photographs: Before starting construction, take photographs that show preconstruction conditions of existing landscape materials; on-site paving; building interior finishes to include ceilings, walls and floors; and interior and exterior equipment that are to remain in place.

1. The photographs will be used to determine responsibility for damage that might appear to have been caused by construction activities. It will be the Contractor's responsibility, through photographs, to show that damage was preexisting.

1.7 VIDEO RECORDINGS

A. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin each video recording with name of Project, Contractor's name, and Project location.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 32 33

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Section 01 31 00 “Project Management and Coordination” for use of District’s Document Control Software.
2. Section 01 32 01 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Section 01 40 02 “Quality Requirements / Contractor Laboratory” for submitting quality control schedules and reports.
4. Section 01 77 00 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
5. Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
6. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
7. Section 01 79 00 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of District's personnel.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. Document Control Software: The District has implemented a computerized web-accessed document management and control system for the Project referred to herein as “Document Control Software.” Use this system for all Project Submittals unless noted otherwise.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect or District and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with Baseline Schedule.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for purchasing.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL FORMATS

A. Architect's Digital Data Files:

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.

a. Digital data drawings files will only be made available with Contractor's signed acceptance of Architect's electronic files/documents use disclaimer.
b. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
c. Digital Drawing Software Program: The Contract Drawings are available in Autodesk Revit 2021.
d. Execute a data licensing agreement in form acceptable to District and Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal timing of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, District, or other parties is indicated, allow 21 days for initial review of each submittal.

5. DSA review: Where submittal must be reviewed by DSA, allow 35 days for review of submittal.

D. Options: Identify options requiring selection by Architect. Make all submittals electronically using District's Document Control Software.

E. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations.

F. Electronic Submittals: Provide submittals using District's Document Control Software. Immediately notify Architect, District Construction Manager, Project Inspector, and Document Control Specialist of all submittals made.

G. Resubmittals: Make resubmittals in same manner as initial submittal.

1. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Furnish one copy of each final action submittal marked with approval notation from Architect's action stamp to Project Inspector.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to Document Control Software.

a. Architect will post annotated file and notify Contractor of posting.

2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Provide certificates and certifications signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.

c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
6. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data**,** unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Prepare Shop Drawings on same digital data software program, version, and operating system as original Drawings.
3. Submit Shop Drawings in the following format:
a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as District's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

a. PDF electronic file.

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

G. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

I. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

J. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

K. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

L. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

M. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

N. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

O. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

P. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

Q. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

R. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of applicable codes and regulations, and calculations, list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

1.7 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

C. BIM Incorporation: Incorporate delegated-design drawing and data files into Building Information Model established for Project.

1. Prepare delegated-design drawings in the following format: Same digital data software program, version, and operating system as the original Drawings.

1.8 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and post review on Document Control Software. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. No Exceptions Noted..

2. Make Corrections Noted.

3. Submit Specified Item.

4. Revise and Resubmit.

B. Informational Submittals: Architect will review each submittal and will post submittal review on Document Control Software only if it does not comply with requirements.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals received from sources other than Contractor will be returned by the Architect without action or may be discarded.

F. Submittals not required by the Contract Documents will be returned by the Architect without action or may be discarded.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 42 00
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the General Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete in place and ready for the intended use.

I. “City”: City of National City, unless specified otherwise.

J. “Includes”, “Including”, and variations thereof: “Includes, but not limited to,…”

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

D. Sources for complete titles of individual Industry Standards:

1. Internet search engines
2. United Master Reference List (UMRL) at https://www.wbdg.org/FFC/DOD/UMRL/UMRL.pdf.

1.4 ABBREVIATIONS AND ACRONYMS

A. Abbreviations and acronyms are to mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." For abbreviations and acronyms not included in these references, use internet search engine according to appropriate context and subject matter.

B. Industry Organizations, Code Agencies, Federal and State Government Agencies, Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.

C. Where duplicates occur, use according to appropriate context and subject matter.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.
2.
3. Section 32 13 13 "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.
4.

1.3 USE CHARGES

A. District's existing water system and electric power are available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations. Allow other entities to use temporary services and facilities without cost, including District, Architect, testing agencies, and authorities having jurisdiction.

1.4 SUBMITTALS

A. Water Pollution Control Plan: Provide Water Pollution Control Plan per Section 01 57 23 "Temporary Storm Water Pollution Control".

B. Project Identification and Temporary Signs: Show materials, fabrication, fasteners, attachment methods, and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Moisture-Protection: Protect materials and construction from water absorption and damage. Protect during delivery, handling, and storage. Discard water-damaged materials, mitigate water intrusion into completed Work, and replace water damaged Work.

C. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

D. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and CBC.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before District's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 8 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

A. All field offices and sanitary facilities must comply with applicable codes and regulations, including disabled accessibility regulations.

B. District Field Offices:

1. Field Offices and Sanitary Facilities: The District does not require field offices or sanitary facilities for this Project.

C. Contractor’s Field Office and Sanitary Facilities:

1. The Contractor's Field Office: Equip with lockable entrances, operable windows and serviceable finishes, and heating and ventilation on foundations adequate for normal loading. Provide adequate space for a conference table with sufficient seating for ten (10) people. Provide the sanitary facilities, wash facilities and drinking water as required by applicable codes and regulations.

D. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations. Store combustible materials away from building(s).

E. Project Identification Sign

1. Banner: Material and fasteners of quality, durability and attachment necessary to remain in clear, neat, legible condition through project closeout.
2. Replace banner at no additional cost to District if District Construction Manager deems sign is no longer clear, neat and legible.
3. Size, Graphics, Location, Substrate: As shown on drawings.

F. Temporary Signs

1. Provide signs as indicated and as required to inform and protect public and individuals seeking entrance to Project.
2. Provide temporary, directional and caution signs for construction personnel and visitors.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area.
2. Maintain support facilities until Substantial Completion.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of District's existing parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

E. Project Signs: Provide construction for project signs as indicated. Unauthorized signs are not permitted. Maintain and touch up signs so they are legible at all times.

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution." Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.3 TREE, PLANT, AND IRRIGATION SYSTEM PROTECTION

A. Take all measures necessary to protect existing trees, plants and irrigation that is to remain. Measures include, without limitation, substantial barricades to prevent damage. Maintain existing plant materials within the area of Work that are to remain, including periodic watering, trimming, and weeding. Install temporary fencing located to protect vegetation and irrigation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

B. Inspect the irrigation system with the Project Inspector to determine existing conditions prior to commencement of Work. Repair, replace, or correct damage to existing irrigation system and plant materials caused by Contractor operations without adjustment to the Contract Time or the Contract Price. The repair, replacement, or correction of existing plant materials and irrigation system shall bring both to their original condition prior to construction, as determined by the Project Inspector.

C. Ensure existing irrigation systems are operable during selective demolition. Provide temporary power to controller. Provide temporary water source to existing mainline within and outside of project limits as required to maintain an operable system during demolition and construction. If temporary power and/or water is unavailable, hand water existing plant materials within and outside of project limits until automatic system is restored.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Site Enclosure Fence: Before construction operations begin, provide site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

1. Provide and maintain temporary barricades at all hazardous areas to protect both pedestrians and vehicles at all times. This protection shall be for students, faculty and all others at both offsite and onsite work. Adjust and relocate barricades as necessary for protection as work progresses to different locations. Areas that require barricades include such things as trenches, changes to sidewalks/driveways and projections above ground.

E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking on District property.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. District reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 56 39
TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection, pruning, and care of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for temporary site fencing.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches above the ground for trees up to and including 4-inch size at this height and as measured12 inches above the ground for trees larger than 4-inch size.

B. Drip Line: The width of the canopy of the tree as measured by the lateral extent of the foliage on all sides.

C. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection, including:

a. Coordination of Work and equipment movement with the locations of protection zones.
b. Trenching by hand or with air spade within protection zones.
c. Field quality control.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.
2. Indicate extent of trenching by hand or with air spade within protection zones.

1.6 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.7 FIELD CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Storage or use of equipment and non-related construction activities, including pipe-cutting machines, tile-cutting machines, and lumber saws.
3. Storage or dumping of deleterious materials harmful to plant growth. Deleterious materials might include fuels, oils, other petroleum products, acids, liquids, concrete mix or concrete washout, stucco mix or stucco washout, paint or paint washout, and zinc grindings from working with galvanized products in the field.
4. Soil disturbance or grade change.
5. Moving or parking vehicles or equipment, even temporarily.
6. Foot traffic.
7. Erection of sheds or structures.
8. Drainage changes or impoundment of water.
9. Excavation or other digging unless otherwise indicated.
10. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

11. The use of a tree as a temporary power pole, backstop, winch support, anchorage, or other similar function.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

1. Planting Soil: Fertile, friable, surface soil, containing natural loam and complying with ASTM D 5268. Provide topsoil that is free of stones larger than 1 inch in any dimension and free of other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from well-drained sites where soil occurs in depth of 4 inches or more; do not obtain from bogs or marshes.

B. Organic Mulch: Free from deleterious materials, animal waste, sludge waste, lumber or C&D wood by-products, trash and debris, and suitable as a top dressing of trees and shrubs.

1. Type: Ground tree trimming, wood, and bark.
2. Size Range: 1/2 inch to 2-inch diameter.
3. Color: Natural, no dyes.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Agriservice, Inc.
b. Plant’s Choice, Inc.
c. Whittier Fertilizer.
d. Or equal.

C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used when approved by District Construction Manager.

1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 2-inch opening, 0.148-inch-diameter wire chain-link fabric; with pipe posts, minimum 2-3/8-inch-OD line posts, and 2-7/8-inch-OD corner and pull posts; with 0.177-inch-diameter top tension wire and 0.177-inch-diameter bottom

tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.

a. Height: 72 inches.

2. Gates: swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones; leaf width 36 inches.

D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:
1. Lettering: 3-inch-high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain . Tie a 1-inch blue vinyl tape around each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.

1. Apply 3-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to District Construction Manager.
3. Access Gates: Install; adjust to operate smoothly, easily, and quietly; free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by District Construction Manager. Install one sign spaced approximately every 20 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.

C. Maintain protection zones free of weeds and trash.

D. Maintain protection-zone fencing and signage in good condition as acceptable to District Construction Manager and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones.

B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and

maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows.

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: Treat as directed by arborist.
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible according to requirements in Section 31 20 00 "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune tree roots 6 inches outside of the protection zone by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction.

1. Prune to remove only injured, broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).

B. Unless acceptable to District Construction Manager, do not cut tree leaders.

C. Cut branches with sharp pruning instruments; do not break or chop.

D. Do not paint or apply sealants to wounds.

E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.

F. Chip removed branches and dispose of off-site.

3.7 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.

1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.

C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

D. Minor Fill within Protection Zone: Where existing grade is 2 inchesor less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.8 MAINTENANCE

A. Area inside the tree protection zone shall be maintained in a neat manner, removing excessive leaf build-up, fallen twigs and branches, or debris deposited by winds or other causes.

B. When installing concrete adjacent to the tree protection zone, install a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.

3.9 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by District Construction Manager.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by District Construction Manager.

B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that District Construction Manager determines are incapable of restoring to normal growth pattern.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off District property.

END OF SECTION 01 56 39

SECTION 01 57 23
TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. CASQA Construction Handbook / Website Portal – Available as a subscription service at: https://www.casqa.org/resources.

1.2 SUMMARY

A. Section includes all the methods and materials to comply with the Project's Water Pollution Control Program (WPCP), which is required for construction sites with a disturbed area of less than one acre:
   1. The District will supply the Conceptual WPCP, hereafter referred to as the District's WPCP (D-WPCP), to minimize the discharge of pollutants in stormwater due to construction activities.

1.3 ABBREVIATIONS

A. ATS: Advanced Treatment System.

B. BMP: Best Management Practice.

C. CASQA: California Storm water Quality Association.

D. CCR: California Code of Regulations.

E. CGP: Construction General Permit.

F. CSMP: Construction Site Monitoring Program.

G. C-WPCP: CONTRACTOR's WPCP.

H. DTSC: Department of Toxic Substance Control.

I. D-WPCP: DISTRICT's WPCP.

J. EPA: Environmental Protection Agency.

K. ESA: Environmentally Sensitive Area.

L. LRP: Legally Responsible Person.

M. NAL: Numeric Action Level.

N. NEL: Numeric Effluent Limitation.

O. NOI: Notice of Intent.

P. NOT: Notice of Termination.

Q. NPDES: National Pollutant Discharge Elimination System.

R. PRD: Project Registration Document.

S. QSD: Qualified SWPPP Developer.

T. QSP: Qualified SWPPP Practitioner.

U. REAP: Rain Event Action Plan.

V. RWQCB: Regional Water Quality Control Board.

W. SAP: Sampling and Analysis Plan.

X. SMARTS: Storm water Multiple Application and Report Tracking System.

Y. SWPPP: Storm Water Pollution Prevention Plan.

Z. SWRCB: State Water Resources Control Board.

AA. WDID: Waste Discharge Identification Number.

BB. WPCD: Water Pollution Control Drawing.

CC. WPCP: Water Pollution Control Program

1.4 ACTION SUBMITTALS

A. Refer to entire section for all the submittal requirements.

B. C-WPCP:

1. Preliminary.
2. Final.
3. Amendments.

C. Construction Site Monitoring Program (CSMP).

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Contractor's QSP orQualified Person.

B. Hazardous waste documentation.

1.6 QUALITY ASSURANCE

A. QSP Qualifications: Throughout the duration of construction, assign to the Project a QSP with the following training qualifications in accordance with Section VII of the CGP:

1. A person who has attended and passed a State Water Board-sponsored or approved QSP training course.
2. Certified as at least one of the following:

    a. Certified Erosion, Sediment and Storm Water Inspector (CESSWI)™ registered through Enviro Cert International, Inc.
    b. Certified Inspector of Sediment and Erosion Control (CISEC)™ registered through CISEC, Inc.
    c. QSD.

B. Qualified Person Qualifications: Throughout the duration of construction, assign to the Project an appropriately trained individual with at least one of the following training qualifications:

1. Attended and passed a State Water Board-sponsored or approved QSD or QSP training course, or
2. Registered or certified as a:

    a. California Registered Civil Engineer.
    b. California Registered Professional or Engineering Geologist.
    c. California Licensed Landscape Architect.
    d. Professional American Institute of Hydrology Hydrologist.
    e. Certified Professional in Storm Water Quality (CPSWQ)™ registered through Enviro Cert International, Inc.
    f. Certified Professional in Erosion and Sediment Control (CPESC)™ registered through Enviro Cert International, Inc.
    g. Professional in Erosion and Sediment Control registered through the National Institute for Certification in Engineering Technologies (NICET).
    h. Certified Erosion, Sediment and Storm Water Inspector (CESSWI)™ registered through Enviro Cert International, Inc.
    i. Certified Inspector of Sediment and Erosion Control (CISEC)™ registered through CISEC, Inc.

1.7 LAWS, REGULATIONS, AND POLICIES

SPECIFICATIONS

A. A.The following laws, permits, regulations and Board policies apply to the erosion and sediment transport control requirements described in this Section.

1. Construction General Permit (CGP): National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity. State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, NPDES No. CAS000002, adopted September 2, 2009 and associated amendments.
2. California Code of Regulations (CCR), Title 23 (Divisions 2 and 4) and Title 24 (Parts 5 and 11).
3. California Regional Water Quality Control Board (RWQCB) Water Quality Control Plan for the San Diego Basin (9).
4. California Statewide General Permit for Waste Discharge Requirements for Discharges from Utility Vaults and Underground Structures to Surface Waters, Order No. 2006-008-DWQ, NPDES No. CAG990002.
5. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or Other Conveyance Systems, Order No. R9-2002-0020, NPDES No. CAG679001.
6. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges from Groundwater Extraction Waste to Surface Waters within the San Diego Region except for San Diego Bay, Order No. R9-2008-0002, NPDES No. CAG919002 (Waste Discharge Application/NPDES Permit, Form 200, replacing Order No. R9-2001-96).
7. California RWQCB San Diego Region, General Waste Discharge Requirements for Discharges from Temporary Groundwater Extraction and Similar Waste Discharges to San Diego Bay, Tributaries Thereto under Tidal Influence, and Storm Drains or Other Conveyance Systems Tributary Thereto, Order No. R9-2007-0034, NPDES No. CAG919001.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Best Management Practices (BMP's) shall be installed and maintained for water pollution control following the guidance of the appropriate BMP Fact Sheet from the CASQA Construction Handbook / Website Portal.

B. BMP's shall be installed and maintained for water pollution control following the guidance of the appropriate BMP Fact Sheet from the CASQA Construction Handbook / Website Portal.

C. Materials needed for the proper installation and operation of BMP's shall comply with the requirements identified on the appropriate CASQA BMP Fact Sheets.

2.2 RAIN GAUGES

SPECIFICATIONS

A. Provide a non-recording rain gauge on the project site and ensure proper positioning to avoid shielding from neighboring buildings, vegetation, etc.

B. Manufacturers: Subject to compliance with requirements, provide one of the following:

1. High Sierra Electronics, Model 2501-00.
2. Belfort Instruments, Model 5-400.
3. Hydrologic Services Pty., Ltd., Standard Model SRG.
4. Or equal.

PART 3 - EXECUTION

3.1 CONSTRUCTION POLLUTION PREVENTION DOCUMENT

A. Provide a designated individual with evidence of adequate training who shall amend the D-WPCP with phase specific details. A copy of the D-WPCP will be provided by the District. Comply with the same without adjustment of the Contract Price or the Contract Time:

1. Implement the C-WPCP with regards to contract work items and all elements required to protect water quality in compliance with the California RWQCB Water Quality Control Plan for the San Diego Basin, available at: http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/basin_plan/index.shtml.
2. In addition to compliance with the Water Quality Control Plan, Comply with all other applicable state, municipal or regional laws, ordinances, rules or regulations governing discharge of storm water, including applicable municipal storm water management programs.

3.2 STORM WATER POLLUTION CONTROL

A. Assign a designated individual with evidence of adequate training who shall amend the D-WPCP, hereafter referred to as the Contractor's WPCP (C-WPCP) with regards to phase-specific details and contract work items.

B. Comply with all applicable state, municipal or regional laws, ordinances, rules or regulations governing discharge of stormwater, including applicable municipal stormwater management programs.

C. Prepare a C-WPCP providing effective soil erosion protection and sediment transport controls including fertilizing, seeding, and mulching for all disturbed areas that are not to be paved or otherwise treated, inactive areas, finished slopes, open space, and completed lots in accordance with the Contract Documents.

D. Include the final C-WPCP with all of its attachments and appendices the Record Documents.

E. Construction activities shall not cause a discharge that alters the physical, thermal, chemical, biological or radioactive properties of any waters of the State; or discharge a contaminant that is likely to cause a nuisance or be harmful to public health, wildlife, or other legitimate uses.

F. To the extent practicable, all construction sites shall provide onsite methods to prevent sediment from entering the existing stormwater systems. Discharge of cloudy or sediment-laden water from any construction site to surface waters or any part of the sewer system is prohibited.

G. All construction sites shall have stabilized construction site ingress and egress to limit tracking of sediment offsite.

H. When sediment escapes the construction site, offsite accumulations of sediment shall be removed by the end of the day. Precautions shall be taken to ensure that sediment does not enter receiving waters.

I. Existing vegetation shall be preserved where possible to minimize erosion.

J. Follow instructions in Part 3 Articles “Temporary BMP Installation, Operation and Maintenance,” “Post-Construction BMP’s,” and “Maintenance Prior to Final Acceptance.”

3.3 CONTRACTOR’S WATER POLLUTION CONTROL PROGRAM (C-WPCP)

A. Do not start work until:

1. An approved copy of the C-WPCP is onsite.
2. A copy of the Erosivity Waiver is onsite, if applicable.

B. Appoint an appropriately trained individual, such as a QSP, to amend and implement the C-WPCP. The appropriately trained individual will hereafter be referred to as the QSP.

C. Contractor is responsible for protecting stormwater systems and receiving waters from the discharge of potential pollutants from the project site due to construction activities by using stormwater pollution control practices, including the following construction support facilities:

1. Staging areas.
2. Storage yards for equipment and materials.
3. Mobile operations.
4. Batch plants for Portland cement concrete and hot mix asphalt.
5. Crushing plants for rock and aggregate.
6. Other facilities installed for construction-related reasons such as haul roads
7. Borrow and disposal sites:

    a. Stormwater pollution due to erosion shall be prevented at an operated borrow or disposal site, during and after completion of construction activities.

b. Upon completion of work, the site shall be left in a condition where stormwater will not collect or stand therein.

D. At least five days before operating any construction support facility that is not covered in the C-WPCP, the QSP shall prepare an amendment to the C-WPCP, showing the location and quantity of water pollution control practices associated with the construction support facility.

E. The QSP shall ensure the documentation of the following:

1. Within 24 hours of completing the weekly inspection – a copy of completed site inspection report.
2. No later than 48 hours after the conclusion of a storm event resulting in a discharge, after a non–stormwater discharge, or after receiving a written notice or an order from the RWCQB or another regulatory agency:

   a. Date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.
   b. Water pollution control practices in use before the discharge, or before receiving the notice or order.
   c. Description of water pollution control practices and corrective actions taken to manage the discharge or cause of the notice.

F. The QSP is responsible for the following:

1. Retaining a printed copy of the CWPCP at the job site.
2. Implementing all aspects of the C-WPCP.
3. Managing work activities in a way that reduces the discharge of pollutants to surface waters, groundwater, and municipal separate storm sewer systems (MS4s).
4. Monitoring and inspecting stormwater pollution control practices at the job site.
5. Notifying the District Construction Manager within six hours when any of the following occur:

   a. Discharges into receiving waters or drainage systems that are causing or could cause water pollution.
   b. Receiving a written notice or order from the RWCQB or any other regulatory agency.

G. Contractor is responsible for implementing appropriate construction site management and erosion and sediment control best management practices as required to protect water quality. Discharges from the site shall not lead to water quality objective exceedances.

H. Contractor is responsible for all delays and all costs associated with preparing, submitting and implementing a SWPPP when the Contractor's actions result in one of the following:

1. One or more acres of soil is disturbed on the project without an Erosivity Waiver.

2. More than five acres of soil is disturbed on the project with an Erosivity Waiver.
3. Failure to complete the project within the Erosivity Waiver's construction window resulting in a rainfall erosivity value (R value) that no longer qualifies the project for an Erosivity Waiver.

3.4 C-WPCP PREPARATION

A. Prepare and implement a C-WPCP as described in the D-WPCP (District template document), including the following:

1. Show the location of disturbed soil areas, water bodies, and water conveyances.
2. Describe the work involved in the installation, maintenance, repair, and removal of temporary and permanent water pollution control practices.
3. Show the locations and types of water pollution control practices that will be used for:

    a. Stormwater and non–stormwater in areas outside the job site, but related to project work activities such as:

        1) Staging areas.
        2) Storage yards.
        3) Access roads.

    b. Activities or mobile operations related to all NPDES permits.
    c. Construction support facilities.

B. Show the locations and types of temporary water pollution control practices that will be used in the work for each construction phase.

C. Include a schedule. The schedule shall show when:

1. Work activities will be performed that could cause the discharge of pollutants into storm water.
2. Water pollution control practices associated with each construction phase will be implemented.
3. Soil stabilization and sediment control practices for disturbed soil areas will be implemented.

D. Amend the C-WPCP whenever:

1. Changes in work activities could affect the discharge of pollutants.
2. Water pollution control practices are added by change order.
3. Water pollution control practices are added at your discretion.
4. Changes in the amount of disturbed soil are substantial.
5. Objectives for reducing or eliminating pollutants in stormwater discharges have not been achieved.
6. The project receives a written notice or order from the RWCQB or another regulatory agency.

E. Start the following process for C-WPCP acceptance within 15 days after Notice to Proceed:

1. Submit a copy of the C-WPCP. The District will provide comments and specify the date when the review stopped when revisions are required.
2. Resubmit a revised C-WPCP within seven days of receiving the District's comments. The District's review will resume when the complete revised C-WPCP has been resubmitted.
3. When the District accepts the revised C-WPCP, submit an electronic copy and a printed copy of the accepted revised C-WPCP.
4. When the RWCQB is required to review the accepted C-WPCP, submit one copy of the accepted document to the RWCQB for its review and comment.
5. When the RWCQB orders changes to the C-WPCP, amend the document within three days.

F. The C-WPCP shall include procedures regarding the following:

1. Monitoring of the National Weather Service forecast on a daily basis. For the National Weather Service forecast, go to: http://www.srh.noaa.gov/ forecast.
2. Installation of applicable construction BMPs and practices as required to avoid exceedances of the water quality objectives defined in the San Diego Basin Plan. Refer to the CASQA Construction Handbook for guidance in the installation, maintenance, or selection of additional BMPs (when necessary).
3. Stormwater pollution control practices shall be installed within 15 days of work activities that disturb soil or before predicted precipitation, as determined necessary for the protection of water quality.

G. The QSP shall oversee inspections of the stormwater pollution control practices identified in the C-WPCP:

1. Before a forecasted storm.
2. After precipitation that causes site runoff.
3. At 24-hour intervals during extended precipitation.
4. On a predetermined schedule of at least once a week.

H. The QSP shall oversee daily inspections for:

1. Storage areas for hazardous materials and wastes.
2. Hazardous waste disposal and transporting activities.
3. Hazardous material delivery and storage activities.

I. Whenever a deficiency is identified in the implementation of the accepted C-WPCP:

1. Correct the deficiency immediately, unless the District agrees to a later date for making the correction.
2. Correct the deficiency before precipitation occurs.
3. The District may correct the deficiency and deduct the cost of correcting the deficiency from payment when the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation.

4. Continue C-WPCP implementation during any suspension of work activities.

J. Whenever there is the concern that the C-WPCP may be inadequate to comply with applicable water quality objectives or water quality standards as contained in the California Toxics Rule, Municipal Permit or San Diego Basin Plan, the QSP may request changes to the stormwater pollution control practices or the District may require changes to stormwater pollution control practices. Changes may include additional or new stormwater pollution control practices.

3.5 CONSTRUCTION SITE MANAGEMENT

A. Implement effective erosion and sediment control practices as well as effective handling, storage, usage, and disposal practices thereby controlling potential pollutants on the job site before they come in contact with storm drain systems and receiving waters

B. Guidance for the implementation of BMP's required to control pollution from erosive activities at the job site is located in Section 3 of the CASQA Construction Handbook (Erosion and Sediment Control BMP's).

C. Guidance for the implementation of BMP's required to control material pollution and manage waste and non–stormwater discharges at the job site is located in Section 4 of the CASQA Construction Handbook (Non-Stormwater Management and Material Management BMP's).

D. The following Construction Site Management is required for construction materials and potential pollutants:

1. The QSP shall keep an inventory of the materials and equipment onsite that are not designed to be outdoors and exposed to environmental conditions (potential pollutant sources).
2. The QSP shall conduct an assessment from the inventory of potential pollutant sources and identify any areas of the site where additional BMP's are necessary to reduce or prevent pollutants in stormwater discharges and authorized non-stormwater discharges. Stormwater discharges and authorized non-stormwater discharges regulated by the CGP shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges. At a minimum, the QSP shall consider the following:

    a. The quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.
    b. The degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.
    c. The direct and indirect pathways that pollutants may be exposed to stormwater or authorized non-stormwater discharges, including an assessment of past spills or leaks, non-stormwater discharges, and discharges from adjoining areas.

d. Sampling results, visual observations, and inspection records.
e. The effectiveness of existing BMP's in reducing or preventing pollutants in stormwater discharges and authorized non-storm water discharges.
f. Nothing in the CGP relieves the Contractor from any responsibilities, liabilities, or penalties to which the Contractor is or may be subject to under Section 311 of the Clean Water Act.

3. The QSP shall ensure that the appropriate MSDS forms are available onsite at least five days before hazardous substances are used or stored onsite.

E. The following Good Site Management Housekeeping is required for construction materials:

1. Minimize exposure of potential pollutant sources to precipitation.
2. Cover and berm (contain) stockpiled construction materials that are not actively being used, materials that are adversely affected by wind and rain such as fertilizer, mulches, topsoil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.
3. Stack erodible landscape material on pallets and cover or store such materials when not being used or applied.
4. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).
5. Implement BMP's to prevent the offsite tracking of loose construction and landscape materials.
6. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.
7. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

F. The following Good Site Management Housekeeping is required for waste management:

1. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.
2. Ensure the containment of portable toilets to prevent discharges of pollutants to the storm drain system or receiving water.
3. Clean portable toilets on a regular basis inspecting them for leaks and spills. When a problem is identified, corrective action shall be taken in a timely manner (within 72 hours or prior to any likely precipitation event, whichever is more immediate).
4. Cover waste disposal containers at the end of every business day and during rain events.
5. Prevent discharges from waste disposal containers to the storm drain system or receiving water.
6. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.
7. Implement procedures that effectively address hazardous and non-hazardous spills.
8. Develop a spill response and implementation plan as part of the C-SWPPP prior to commencement of construction activities.

9. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

G. The following Good Site Management Housekeeping is required for vehicle storage and maintenance:

1. Prevent any of the following substances from discharging to the storm drains or surface waters (not meant to be an all-inclusive list):

   a. Transfer case oil.
   b. Antifreeze.
   c. Brake fluid.
   d. Power steering fluid.
   e. Transmission fluid.
   f. Hydraulic fluid.
   g. Grease.
   h. Fuel.
   i. Oil.

2. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMP's.
3. Clean leaks immediately and disposing of leaked materials properly.

H. The following Good Site Management Housekeeping is required to control air deposition of site materials and from site operations (dust control):

1. Effective wind erosion control BMP's shall be implemented year round to prevent or alleviate dust, which may contain such particulates as sediment, nutrients, trash, metals, bacteria, oil and grease, and organics.
2. Excavation, transportation, and handling of material containing hazardous waste or contamination shall result in no visible dust migration

I. Document all Good Site Management Housekeeping BMP's in accordance with the nature and phase of the construction project (Grading and Land Development Phase, Streets and Utilities, or Vertical Construction for traditional land development projects).

J. The following Good Site Management Housekeeping is required for non-stormwater management:

1. Effective BMP's shall be implemented to control all non-stormwater discharges during construction.
2. Vehicles shall be washed in such a manner as to prevent non-stormwater discharges to surface waters or MS4 drainage systems.
3. Streets shall be cleaned in such a manner as to prevent unauthorized non-stormwater discharges from reaching surface water or MS4 drainage systems.
4. Dewatering shall be conducted in such a manner as to prevent sediment-laden or contaminated discharge from leaving the site:

a. The discharge of water from utility vaults and underground structures and surface waters is covered under the California Statewide permit, Order No. 2006-008-DWQ. Dischargers shall comply with BMPs that ensure the water discharged is not contaminated and will not create an adverse water quality impact when discharged.
b. The dewatering of construction excavations is subject to San Diego Regional Water Quality Control Board regulations depending on where the accumulated construction water is discharged:
    1) Discharge to the sanitary sewer: Discharge of accumulated water to the sanitary sewer is not allowed without the permission of the Department of Public Works. Permission may be obtained by submitting a request to the appropriate Municipalities Public Works Department.
c. Copy of the written approval to discharge into a sanitary sewer system at least five days before starting discharge activities, if applicable. This information shall be on site when discharging to a municipal sanitary sewer system.
d. Copy of the written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, if applicable. This information shall be on site when discharging to a municipal sanitary sewer system.

5. Authorized non-stormwater discharges regulated by the CGP shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges:

    a. Immediately stop working and notify the District if any of the following is discovered onsite:

        1) Contractor reasonably believes that the substance discovered is asbestos as defined in Labor Code § 6501.7 or a hazardous substance as defined in Health & Safety Code § 25316 and § 25317.
        2) An identifiable substance that has not been made harmless is discovered.

    b. Handle, store, and dispose of hazardous waste under 22 CA Code of Regulations Division 4.5.
    c. Dispose of hazardous waste within 90 days of the start of generation. Use a hazardous waste manifest and a transporter registered with the California DTSC to transport hazardous waste to an appropriately permitted Class I Disposal Site.

K. The following Good Site Management Housekeeping is required for erosion control:

1. Provide effective soil cover for inactive areas and all finished slopes, open space, utility backfill, and completed lots:
    a. Provide temporary irrigation equipment for vegetation.

2. Limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, consider the use of plastic materials resistant to solar degradation.

L. The following Good Site Management Housekeeping is required for sediment control:

1. Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site for all projects regardless of the risk level.
2. On sites where sediment basins are to be used, design at minimum, sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

M. Implement appropriate erosion control BMP's (runoff control and soil stabilization) in conjunction with sediment control BMP's for areas under active construction, including:

1. Linear sediment controls along toe to slopes face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow lengths.

Critical Slope/Sheet Flow Length Combinations

Slope Percentage	Sheet flow length not to exceed
0-25%	20 feet
25-50%	15 feet
Over 50%	10 feet

2. Limiting construction activity traffic to and from the project to entrances and exits that employ effective controls to prevent offsite tracking of sediment.
3. Storm drain protection for all inlets with the potential to receive runoff from areas impacted by construction activities.
4. Perimeter protection.
5. Daily inspections of all immediate access roads with removal of any sediment or other deposited materials prior to any rain event by vacuuming or sweeping.

N. The following Good Site Management Housekeeping is required for run-on and runoff control:

1. All projects shall effectively manage all run-on, all runoff within the site, and all runoff that discharges off the site.
2. Run-on from offsite shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in the CGP.

3.6 TEMPORARY BMP INSTALLATION, OPERATION, AND MAINTENANCE

A. The C-WPCP shall describe and include the specific use of each type of water pollution control BMP as required for adherence to water quality objectives.

B. When a temporary construction entrance or roadway is being used, do not allow soil, sediment, or other debris that is tracked onto the pavement to enter storm drains, open drainage facilities, and watercourses.

C. When material is tracked onto the pavement, remove it within 24 hours unless the District authorizes a longer period.

D. Retain records of street sweeping activities including sweeping times, sweeping locations, and the quantity of disposed sweeping waste.

E. Before installing erosion control measures remove and dispose of trash, debris and weeds in areas to receive erosion control materials.

F. Protect any hardscape, lined drainage channels, and existing vegetation from hydraulically applied material overspray.

G. Proper selection of materials is critical for specific slopes and slope distances. No one product is applicable for all situations. Erosion control products should be selected on a case by case basis.

H. Do not drive vehicles upon erosion control products following placement.

I. Install temporary fencing for the protection of ESA's and the preservation of existing vegetation:

1. If wood posts are used, fasteners shall be staples or nails.
2. If steel posts are used, fasteners shall be tie wires or locking plastic fasteners.
3. Spacing of the fasteners shall be no more than 8 inches apart.
4. Before clearing and grubbing activities.
5. From outside of the protected area.
6. With posts spaced 8 feet apart and embedded at least 16 inches in the soil.
7. Signs shall be attached with the top of the sign panel flush with the top of the high visibility fabric and placed 100 feet apart along the length and at each end of the fence.
8. Install fence to enclose the drip line of foliage canopy of protected plants and protect visible roots from encroachment.

J. Provide a certificate of compliance (certified weed free from the vendor) for temporary straw bales when used as visibility or noise barriers in ESA's.

K. Place gravel-filled bags behind Type K temporary railings if used in an area with run-on.

3.7 MAINTENANCE PRIOR TO FINAL ACCEPTANCE

A. Maintain planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include the filling, leveling, and repairing of any washed or eroded areas, as may be necessary and sufficient watering to maintain the plant materials in a healthy condition.

B. The District may require replanting of any areas in which the establishment of the vegetative ground cover does not appear to be developing satisfactorily.

END OF SECTION 01 57 23

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and “or equal” products.

B. Related Requirements:

1. Section 01 21 00 "Allowances" for products selected under an allowance.
2. Section 01 25 00 "Substitution Procedures" for requests for substitutions.
3. Section 01 42 00 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. “or equal” Product: Product that is demonstrated and approved through the substitution request process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed

to establish significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating “or equal” products of additional manufacturers.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to District.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for District.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCTS NOT ALLOWED

A. Do not provide products that contain asbestos, lead, or coal tar.

2.2 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. District reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. For products specified by name and accompanied by the term "or equal," comply with requirements of Section 01 25 00 “Substitution Procedures” to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Where Specifications name a single manufacture’s product and indicate “no substitution”, provide the named product that complies with requirements. “or equal” products (substitutions) will not be considered.
2. Where Specifications name a single manufacturer or source and indicate “no substitution”, provide a product by the named manufacturer or source that complies with requirements. “or equal” products (substitutions) will not be considered.
3. Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. “or equal” products (substitutions) will be considered.
4. Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. “or equal” products (substitutions) will be considered unless expressly specified otherwise.

5. Basis-of-Design Product: Where Specifications name a product as the basis-of-design product, or refer to a product indicated on Drawings as the basis-of-design product, provide the specified or indicated product. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. “or equal” products (substitutions) will be considered.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select features such as color, gloss, pattern, density, texture from manufacturer's product line.

PART 3 - EXECUTION

3.1 COLOR CONSISTENCY

A. All like finish products within a given visible area shall be from the same dye lot or color run.

B. If like finish products within a given visible area vary slightly in color, mix and blend varying colors to avoid distinct areas of color variation.

END OF SECTION 01 60 00

SECTION 01 73 00
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of District-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Requirements:

1. Section 01 10 00 "Summary" for limits on use of Project site.
2. Section 01 33 00 "Submittal Procedures" for submitting surveys.
3. Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of District-accepted deviations from indicated lines and levels, and final cleaning.
4. Section 02 41 19 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.

1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:

a. Contractor's superintendent.
b. Trade supervisor responsible for cutting operations.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify the District Construction Manager of locations and details of cutting, and await directions from the District Construction Manager before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

a. Primary operational systems and equipment.
b. Fire separation assemblies.
c. Air or smoke barriers.
d. Fire-suppression systems.
e. Plumbing piping systems.
f. Mechanical systems piping and ducts.
g. Control systems.
h. Communication systems.
i. Fire-detection and -alarm systems.
j. Conveying systems.
k. Electrical wiring systems.
l. Operating systems of special construction.
m. Weather barriers.
n. Thermal protection systems, including insulation assemblies.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that

results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include the following:

a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Exterior curtain-wall construction.
d. Sprayed fire-resistive material.
e. Equipment supports.
f. Piping, ductwork, vessels, and equipment.
g. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in the District Construction Manager's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site to District Construction Manager 10 days prior to start of work.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine surfaces, substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and District Construction Manager that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions

outside the control of Contractor, submit a request for information to Architect according to requirements in Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify the District Construction Manager promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify the District Construction Manager when deviations from required lines and levels exceed allowable tolerances.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and project Inspector.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, survey monuments, temporary control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and survey monuments during construction operations.

1. If any existing permanent benchmark will be destroyed as a result of construction, notify District Construction Manager in writing before such destruction occurs. Do not disturb benchmark until City forces have established

necessary control to set a new permanent benchmark and District Construction Manager has given written permission to proceed.

2. If any survey monument will be destroyed as a result of construction, before such destruction occurs, notify District Construction Manager in writing. Engage a Land Surveyor to survey as necessary and prepare Pre-construction Corner Record complying with the California Professional Land Surveyors Act. Section 8771. File Pre-construction Corner Record with San Diego County Surveyor. Send a copy of preliminary Corner Record to District Construction Manager. Do not disturb survey monument until Pre-construction Corner Record is received and accepted by County and written permission is obtained from District Construction Manager. After lost monument has been replaced, engage a Land Surveyor to file a final Corner Record (or a Record of Survey if required) with San Diego County Surveyor.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately

located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the District Construction Manager.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use only products, cleaners, and installation materials that are not considered hazardous.

K. Underground Detectable Warning Tapes: Ensure that completed work provides fully functional underground detectable warning tapes per requirements specified in other Sections.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces and assemblies to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials, assemblies, and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping.
2. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Cut or form holes for penetrations accurately to allow for proper sealing. Temporarily cover openings when not in use.
3. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
4. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
5. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
6. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
7. Proceed with patching after construction operations requiring cutting are complete.

H. Notify District Construction Manager 48 hours prior to closing openings. Allow Inspector to view conditions prior to closing.

I. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance. Replace ceiling tiles damaged by cutting and patching work.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

J. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 DISTRICT-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for District's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by District's construction personnel.

1. Construction Schedule: Inform District of Contractor's preferred construction schedule for District's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify District if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include District's construction personnel at preinstallation conferences covering portions of the Work that are to receive District's work. Attend preinstallation conferences conducted by District's construction personnel if portions of the Work depend on District's construction.

3.8 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 74 19 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.10 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.11 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous **demolition and construction** waste.
2. Recycling nonhazardous **demolition and construction** waste.
3. Disposing of nonhazardous **demolition and construction** waste.

B. Related Requirements:
1. Section 02 41 19 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.
2. Section 31 10 00 "Site Clearing" for disposition of waste resulting from site clearing and removal of above - and below-grade improvements.

1.3 DEFINITIONS

A. Source Separated Recycling Facility (SSRF): A facility that exclusively accepts separated individual commodities for the purpose of recycling; such as metals, paper, wood, and/or inerts such as asphalt and concrete.

B. Mixed Debris: Includes solid items such as building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations. One mixed debris processing facility is located in San Diego County at EDCO, 6670 Federal Blvd, Lemon Grove, CA 91945, herein referred to as the EDCO Mixed Debris Recycling Facility.

C. Class III Landfill: A landfill that accepts non-hazardous waste such as household, commercial, and industrial waste.

D. Administrative Recycling Program: Separation and recovery of paper and beverage containers from both permanent administrative offices and construction site office(s).

E. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

F. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

G. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

H. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

I. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

J. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Clearly label all recycling containers and list acceptable and unacceptable materials. Deliver recyclable materials to source separated recycling facilities. Facilitate recycling and salvage of materials, including the following as applicable:

1. Demolition Waste:

a. Asphalt paving.
b. Concrete.
c. Concrete reinforcing steel.
d. Brick.
e. Concrete masonry units.
f. Wood studs.
g. Wood joists.
h. Plywood and oriented strand board.
i. Wood paneling.
j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.

q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.
ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.
oo. Transformers.
pp.

2. Construction Waste:

a. Masonry and CMU.
b. Lumber.
c. Wood sheet materials.
d. Wood trim.
e. Metals.
f. Roofing.
g. Insulation.
h. Carpet and pad.
i. Gypsum board.
j. Piping.
k. Electrical conduit.
l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.

6) Wood crates.
7) Plastic pails.

B. Co-mingled Debris: Direct all co-mingled site tonnage to the EDCO Mixed Debris Processing Facility.

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 10 days of date established for the Notice to Proceed.

1.6 INFORMATIONAL SUBMITTALS

A. SDUSD Contractor Summary Site Debris Diversion Report: Concurrent with each Application for Payment, submit report. Use District Form CSDDR-1, attached at the end of this Section. The District Construction Manager will provide an editable version. *Failure to include Report will result in a 10 percent withholding of payment.*

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Qualification Data: For Waste Management Coordinator.

H. Disposal Manifests:

1. Original manifests and receipts acknowledging disposal of all hazardous and non-hazardous waste material from the project showing delivery date, quantity, and appropriate signature of landfill's authorized representative.

    a. Submit within 30 days of date that material was transported off site.

1.7 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Waste Management Conference: Prior to commencement of work, conduct conference at Project site. Attendees shall include District Construction Manager, Waste Management Coordinator, and Contractor personnel involved in demolition and waste handling. Review methods and procedures related to waste management, including:

1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 SITE DEBRIS MANAGEMENT PLAN

A. General: Develop a site debris management plan. Use District Form CSDMP-1, attached at the end of this Section. The District Construction Manager will provide an editable version. Use a separate form for each project phase (land clearing, demolition, construction).

B. Post approved plan in a prominent location at the Project site and distribute copies to superintendent and all subcontractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.Coordinator shall be present at the Project site full time during land clearing and demolition phases, and part time as needed during construction phase.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 01 50 00 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 FORMS

A. See following pages.

FORM CSDMP-1
SDUSD CONTRACTOR SITE DEBRIS MANAGEMENT PLAN (CSDMP)

Complete a separate form for each project phase (i.e. demolition, land clearing, construction)

Project Title:		
Contract or Work Order No.:		
Contractor's Name:		
Street Address:		
City:	State:	Zip:
Phone: ( )	Fax: ( )	
E-Mail Address:		
Prepared by: (Print Name)		
Date Submitted:		

Reuse, Recycling or Mixed Debris Processing Processes Used

Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that are estimated for reuse and recycling below:

01 - Reuse of building materials or salvage items on site (i.e. fencing or red clay brick)
02 - Salvaging building materials or salvage items at an offsite salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an offsite recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at EDCO Mixed Debris Recycling Facility
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
09 - Other (please describe) _____

Types of Material Generated

Use these codes to indicate the types of material that are estimated to be generated on the project

A = Asphalt	C = Concrete	1. M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)
Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period
Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units). Provide weight slips or load tickets for each load delivered.

SECTION I - RE-USED/RECYCLED MATERIALS

Include all proposed recycling activities for source separated recycling centers.

Type of Material	**Type of Activity**	**Facilities Used/ Location**	**Total Truck Loads**	**Total Quantities**		
				Tons	**Cubic YD**	**Other Wt.**
(ex.) M	04	ABC Metals, National City	24	355		
a. Source Separated Diversion			0	0	0	0

FORM CSDMP-1 (Continued)
SDUSD CONTRACTOR SITE DEBRIS MANAGEMENT PLAN (CSDMP)

SECTION II - MIXED DEBRIS PROCESSING MATERIALS

Include estimates of all debris generated from activities where no source separated recycling will occur.

Type of Material	Type of Activity	Facilities Used/ Location	Total Truck Loads	2. Total Quantities		
				Tons	Cubic YD	Other Wt.
(ex.) M/C	5	EDCO Mixed Debris Recycling Facility	2	35		

SECTION III - TOTAL MATERIALS GENERATED EDCO

This section calculates the total materials recycled verses the total materials disposed for mixed debris sent to EDCO

	Tons Recycled (tons x 0.80)	*Tons Disposed (tons x 0.20)*
a. EDCO		

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION

Add totals from Section I + Section II +Section III

	Tons	Cubic Yards	Other Wt.
a. Materials Re-Used and Recycled (Section I + II +III)			
3. b. EDCO Disposal (Section III)			
c. Total Materials Generated (a. + b. = c.)			
d. Landfill Diversion Rate (a/c = d Tons Only)*			

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments *(Provide any additional information pertinent to planned reuse, recycling, or disposal activities):*

Notes:

1. EDCO will recover 80% of the mixed debris for the purposes of recycling. Therefore, multiply tonnage by 0.80 for tons recycled and multiply tonnage by 0.20 for total project disposal.
2. Suggested Conversion Factors: From Cubic Yards to Tons
   - Asphalt: 0.61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   - Concrete: 0.93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   - Ferrous Metals: 0.22 (ex. 1000 CY Ferrous Metal = 220 tons)
   - Non-Ferrous Metals: 0.10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   - Drywall Scrap: 0.20
   - Wood Scrap: 0.16

Section B: Plan Narrative -- Methods to Ensure Diversion

Describe the method to be used to reuse and recycle (methods shall include one or more of the following: deconstruction to salvage all or most materials generated, selective salvage with source separation, and/or reuse of materials onsite):

Describe methods to be used to provide onsite instruction regarding appropriate separation, handling, recycling, salvage, reuse and return methods to achieve waste reduction goals.

Describe methods to be used to protect materials to be recycled from contamination. Including schedule of regular clean-up, schedule visual inspections of dumpsters and recycling bins to identify potential contamination of materials.

How will materials be stored and how much space will be required?

Describe your administrative recycling program.

FORM CSDDR-1
SDUSD CONTRACTOR SUMMARY SITE DEBRIS DIVERSION REPORT (CSDDR)

(Submit With Each Progress Payment)

Project Title:				
Contract or Work Order No.:				
Contractor's Name:				
Street Address:				
City:			State:	Zip:
Phone: ( )			Fax: ( )	
E-Mail Address:				
Prepared by: (Print Name)				
Date Submitted:				
Period Covered:		From:	To:	

Reuse, Recycling or Mixed Debris Processing Processes Used

Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that were recycled or disposed in the sections below:

01 - Reuse of building materials or salvage items on site (i.e. fencing or red clay brick)
02 - Salvaging building materials or salvage items at an offsite salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an offsite recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at EDCO Mixed Debris Recycling Facility
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
09 - Other (please describe) _____

Types of Material Generated

Use these codes to indicate the types of material that were generated on the project

A = Asphalt	C = Concrete	M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)

Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period

Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units). Provide weight slips or load tickets for each load delivered.

SECTION I - RE-USED/RECYCLED MATERIALS

Include all recycling activities for source separated recycling centers where recycling occurred.

Type of Material	**Type of Activity**	**Facilities Used/ Location**	**Total Truck Loads**	**Total Quantities**		
				Tons	**Cubic YD**	**Other Wt.**
(ex.) M	04	ABC Metals, National City	24	355		
a. Source Separated Diversion			0	0	0	0

FORM CSDDR-1 (Continued)
SDUSD CONTRACTOR SUMMARY SITE DEBRIS DIVERSION REPORT (CSDDR)

SECTION II - MIXED DEBRIS PROCESSING MATERIALS

Include all debris generating activities for materials that were not send to source separated recycling facilities.

Type of Material	Type of Activity	Facilities Used/Location	Total Truck Loads	Total Quantities		
				Tons	Cubic YD	Other Wt.
(ex.) M/C	05	EDCO Mixed Debris Recycling Facility	2	35		

SECTION III - TOTAL MATERIALS GENERATED EDCO

This section calculates the total materials recycled verses the total materials disposed for mixed debris sent to EDCO

	Tons Recycled (tons x 0.80)	*Tons Disposed (tons x 0.20)*	
a. EDCO			

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION

Add totals from Section I + Section II

	Tons	Cubic YD	Other Wt.
a. Materials Re-Used and Recycled (Section I + II +III)	0		
b. EDCO Disposal (Section III)	0		
c. Total Materials Generated (a. + b. = c.)	0		
d. Landfill Diversion Rate (a/c = d Tons Only)*			

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments *(Provide any additional information pertinent to planned reuse, recycling, or disposal activities):*

Notes:

4. EDCO will recover 80% of the mixed debris for the purposes of recycling. Therefore, multiply tonnage by 0.80 for tons recycled and multiply tonnage by 0.20 for total project disposal.
5. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)
   Asphalt: 0.61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)
   Concrete: 0.93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)
   Ferrous Metals: 0.22 (ex. 1000 CY Ferrous Metal = 220 tons)
   Non-Ferrous Metals: 0.10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)
   Drywall Scrap: 0.20
   Wood Scrap: 0.16

END OF SECTION 01 74 19

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including:

1. Substantial Completion procedures.
2. Final completion procedures.
3. List of Incomplete Items.
4. Warranties.
5. Final cleaning.
6. Repair of the Work.

B. Related Requirements:
1. Section 01 73 00 "Execution" for progress cleaning of Project site.
2. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
3. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Submittals Prior to Substantial Completion: Complete the following prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit testing, adjusting, and balancing records.
5. Submit changeover information related to District's occupancy, use, operation, and maintenance.

B. Procedures Prior to Substantial Completion: Complete the following prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise District that site is ready for final changeover of permanent locks. District will make final changeover.
2. Complete startup and testing of systems and equipment.
3. Perform preventive maintenance on equipment used prior to Substantial Completion.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements.

6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

C. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of seven days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Project Inspector will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list). Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   a. Certified:
      1) Signed and dated by person with authority to represent Contractor.
      2) Subsequent to 1) above, signed and dated by person with authority to represent Architect.
2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
3.
4. Instruct District's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of seven days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Project Inspector will either proceed with inspection or notify Contractor of unfulfilled requirements.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit List of Incomplete items in the following format:
    a. MS Excel electronic file.
    b. PDF electronic file.
    c. Three paper copies.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with San Diego Air Pollution Control District allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved, to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Sweep concrete floors broom clean in unoccupied spaces.

h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
j. Remove labels that are not permanent.
k. Wipe surfaces of mechanical and electrical equipmentand similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
l. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION 01 77 00

SECTION 01 78 23
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manual.
2. Systems and equipment operation manuals.
3. Systems and equipment maintenance manuals.
4. Product maintenance manuals.

B. Related Requirements:

1. Section 01 33 00 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

C. Delivery Media: Submit operation and maintenance manuals to District Construction Manager in the following media:

1. Submit on digital media acceptable to District Construction Manager. Enable reviewer comments on draft submittals.
2. Submit one paper copy.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 COMMON REQUIREMENTS FOR OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of District.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for District Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

F. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

G. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by District's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.

2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Precautions against improper use.
9. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by District's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

1.9 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.

2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:
1. Section 01 77 00 "Closeout Procedures" for general closeout procedures.
2. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Submit one electronic copy of marked-up record prints.

B. Record Specifications: Submit one electronic copy of marked-up record specifications, including addenda and contract modifications.

C. Record Product Data: Submit one electronic copy of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued, depicting the current status of the Work.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Locations of concealed internal utilities.
    i. Changes made by Change Order, Construction Change Directive, or Field Work Order.
    j. Changes made following Architect's written orders.
    k. Details not on the original Contract Drawings.
    l. Field records for variable and concealed conditions.
    m. Record information on the Work that is shown only schematically.
    n. Changes made by responses to Requests for Information (RFI's).

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, allowances applied, and similar identification, where applicable.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders where applicable.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Note related Change Orders where applicable.

1.7 RECORDING AND MAINTENANCE

A. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's, Project Inspector’s, and District Construction Manager's reference during normal working hours.

B. Review Record Documents weekly with Project Inspector. Indicate to Project Inspector the items incorporated in Project Record Documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing District's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

B. Related Requirements:

1. Divisions 2 through 33 Sections for specific requirements for demonstration and training of products and systems in those Sections.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name and address of videographer.
c. Name of Architect.
d. Name of District Construction Manager.
e. Name of Contractor.
f. Names of Contractor Construction Manager, Project Manager, and Superintendent.
g. Date of video recording.

2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
3. At completion of training, submit complete training manual(s) for District's use in PDF electronic file format.

1.5 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative experienced in operation and maintenance procedures and training.

1.6 COORDINATION

A. Coordinate instruction schedule with District's operations. Adjust schedule as required to minimize disrupting District's operations and to ensure availability of District's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed by Architect.

1.7 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project record documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.

c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.8 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.9 INSTRUCTION

A. Engage qualified instructors to instruct District's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. District will furnish a representative to describe District's operational philosophy.
2. District will furnish Contractor with names and positions of participants.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide instruction addressing seasonal operations variations.

1. Schedule training with District, through District Construction Manager, with at least seven days' advance notice.

C. Training Location: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. When necessary, provide classroom training.

1. Webinar training is not acceptable.

D. Reference Material: Conduct training using final operation and maintenance data submittals.

E. Cleanup: Collect used and leftover educational materials and give to District. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.10 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, color digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.

1. Submit video recordings on thumb drive.
2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.

4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training thumb drive that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:

    a. Name of Contractor/Installer.
    b. Business address.
    c. Business phone number.
    d. Point of contact.
    e. E-mail address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

    a. Produce segments to present a single significant piece of equipment per segment.
    b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.

1. Furnish additional portable lighting as required.

E. Narration: Describe scenes on video recording by audio narration. Include description of items being viewed.

F. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 79 00

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Demolition and removal of selected portions of exterior or interior of building or structure and site elements.
2. Removal and salvage of existing items for delivery to District and removal of existing items for reinstallation.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 013201 "Construction Progress Documentation."
3. Section 013233 "Photographic Documentation" for preconstruction photographs taken before demolition.
4. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental protection measures for selective demolition operations.
5. Section 017300 "Execution" for cutting and patching procedures.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner as indicated.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage; prepare for reuse; and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items

of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to District.

1.4 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with District's operations.

1.5 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure District's on-site operations are uninterrupted.
2. Temporary interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Coordination of District's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
5. Means of protection for items to remain and items in path of waste removal from building.

B. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

1.6 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 FIELD CONDITIONS

A. The District will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so District's operations will not be disrupted.

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

C. Notify the District Construction Manager of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials:

1. It is not expected that hazardous materials will be encountered in the Work.

a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the District Construction Manager. Hazardous materials will be removed in accordance with Specification Sections 028233, 028333, and 028433. The costs associated with such work shall be paid out of the appropriate Allowance, as approved by the District Construction Manager.

E. Termite Infestation: It is not expected that active termite infestations will be encourted in the Work.

F. On-site sale of removed items or materials is not permitted.

G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:

1. <Insert warranted system>.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by the District. The District does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video, measured drawings. Comply with Section 013233 "Photographic Documentation."

1. Inventory and record the condition of items to be removed for salvage or reinstallation. Photograph or video conditions that might be misconstrued as damage caused by removal.

3.2 PREPARATION

A. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

B. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

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

3.3 UTILITY SERVICES AND BUILDING SYSTEMS

A. Existing Services/Systems to Remain: Maintain utilities and building systems and equipment to remain and protect against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utilities and building systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated utilities when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If disconnection of utilities and building systems will affect adjacent occupied parts of the building, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to those parts of the building.
4. Demolish and remove existing building systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment and components.

5. Abandon existing building systems, equipment, and components indicated on Drawings to be abandoned in place.

    a. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    b. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

6. Remove and reinstall/salvage existing building systems, equipment, and components indicated on drawings to be removed and reinstalled or removed and salvaged:

    a. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment and components; when appropriate, reinstall, reconnect, and make equipment operational.
    b. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and components and deliver to Owner.

3.4 SALVAGE/REINSTALL

A. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area [on-site][off-site][designated by Owner][indicated on Drawings].

5. Protect items from damage during transport and storage.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least <Insert number> hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water

when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Work in Historic Areas: Selective demolition may be performed only in areas of Project that are not designated as historic. In historic spaces, areas, and rooms, or on historic surfaces, the terms "demolish" or "remove" to mean historic "removal" or "dismantling" as specified in Section 024296 "Historic Removal and Dismantling."

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete:

1. Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
2. Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 09 24 00 - CEMENT PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal lath.
2. Accessories.
3. Base-coat cement plaster.
4. Cement plaster finish coats.

1.2 ACTION SUBMITTALS

A. Product Data:

1. For each type of product.

1.3 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.4 FIELD CONDITIONS

A. Comply with ASTM C926 requirements.

B. Exterior Plasterwork:

1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
2. Apply plaster when ambient temperature is greater than 40 deg F.
3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.

C. Factory-Prepared Finish Coats: Comply with manufacturer's written instructions for environmental conditions for applying finish coats.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated on Drawings, provide cement plaster assemblies identical to those of assemblies tested for fire resistance in accordance with ASTM E119 by a qualified testing agency.

2.2 METAL LATH

A. Wire-Fabric Lath:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. ClarkDietrich
    b. Davis Wire; a Heico Wire Group company
    c. Structa Wire Corp.

2. Welded-Wire Lath: ASTM C933; self-furring, 1.14 lb/sq. yd..
3. Woven-Wire Lath: ASTM C1032; self-furring, with stiffener wires, 1.4 lb/sq. yd., with 1.5-inch openings, and woven from 0.051-inch diameter wire.
4. Water-Resistive Barrier: Vapor-permeable paper, factory bonded to back of lath; complying with requirements in FS UU-B-790a for Type I, Grade D and with 60-minute water resistance.

    a. Provide water-resistive barrier at exterior locations.

2.3 ACCESSORIES

A. General: Comply with requirements in ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

2.4 BASE-COAT CEMENT PLASTER

A. General: Comply with requirements in ASTM C926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland Cement Mixes:

    a. Scratch Coat: For cementitious material, mix 1 part portland cement and 0

to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.

b. Brown Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.

2.5 CEMENT PLASTER FINISH COATS

A. Ready-Mixed Finish-Coat Plaster: Mill-mixed Portland cement, aggregates, coloring agents, and proprietary ingredients.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Omega Products International.
b. LaHabra Stucco Solutions; Parax USA.
c. Merlex Stucco.
d. Or Equal.

2. Color: As selected by Architect from manufacturer's full range.

2.6 PLASTER MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I.

1. Color for Finish Coats: Match existing.

B. Colorants for Job-Mixed Finish Coats: Colorfast mineral pigments that produce finish plaster color to match Architect's sample.

C. Lime: ASTM C206, Type S; or ASTM C207, Type S.

D. Sand Aggregate: ASTM C897.

2.7 MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in cement plaster.

C. Bonding Compound: ASTM C932.

D. Fasteners for Attaching Metal Lath to Substrates: ASTM C 1861.

E. Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter unless otherwise indicated.

F. Steel drill screws complying with ASTM C 1002 for fastening metal lath to wood or steel members less than 0.033-inch thick.

G. Steel drill screws complying with ASTM C 954 for fastening metal lath to steel members 0.033- to 0.11-inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare smooth, solid substrates for plaster in accordance with ASTM C926.

3.3 INSTALLATION, GENERAL

A. Fire-Resistance-Rated Assemblies: Install components in accordance with requirements for design designations from listing organization and publication indicated on Drawings.

B. Sound-Attenuation Blankets: Where indicated on Drawings, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

3.4 INSTALLATION OF METAL LATH

A. Metal Lath: Install in accordance with ASTM C1063.

1. Partition Framing and Vertical Furring: Install welded-wire lath.
2. Flat-Ceiling and Horizontal Framing: Install woven-wire lath.

3.5 APPLICATION OF BASE-COAT CEMENT PLASTER

A. General: Comply with ASTM C926.

1. Install so that finished plaster surfaces will not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane when measured by a 10-ft. straightedge

placed on surface.

2. Install so finished plaster surfaces will be flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets.

B. Bonding Compound: Apply on [unit masonry][and][concrete] substrates for direct application of plaster.

C. Wall/Vertical Base Coats:

1. Three-Coat Plasterwork Over Metal Lath: Install base-coat mixes for use over metal lath to produce scratch and brown coats having 3/4-inch total thickness.
2. Two-Coat Plasterwork Over Solid Plaster Bases: Install base-coat mix for use over solid plaster bases in [3/8-inch thickness on masonry][1/4-inch thickness on concrete].

D. Ceiling/Horizontal Base Coats:

1. Three-Coat Plasterwork Over Metal Lath: Install base-coat mixes for use over metal lath to produce scratch and brown coats with [1/2-inch total thickness][3/4-inch total thickness for metal lath on concrete].
2. Two-Coat Plasterwork Over Solid Plaster Bases: Install base-coat mix for use over solid plaster bases in 1/4-inch thickness on concrete.

3.6 APPLICATION OF CEMENT PLASTER FINISH COATS

A. General: Comply with ASTM C926.

1. Do not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane in finished plaster surfaces when measured by a 10-ft. straightedge placed on surface.
2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, groove finish coat at junctures with metal.
3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Plaster Finish Coats: Apply to provide finish to match existing plaster finish.

3.7 REPAIR

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.8 CLEANING

A. Remove temporary protection and enclosure of other work after plastering is complete.

B. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered.

C. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 09 24 00

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C840 requirements or manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, or mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings in accordance with ASTM E119; tested by a qualified testing agency.

2.3 GYPSUM BOARD, GENERAL

A. Size: Provide panel products in maximum lengths and widths available that will minimize joints in each area and that correspond with support system specified or indicated on Drawings.

2.4 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C1396/C1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Georgia-Pacific Gypsum LLC
    b. Gold Bond Building Products, LLC provided by National Gypsum Company
    c. USG Corporation
    d. Or Equal.

2. Thickness: As indicated on Drawings.
3. Long Edges: Tapered.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.

1. Material: Galvanized-steel sheet or aluminum-coated steel sheet or rolled zinc.
2. Shapes:

    a. Cornerbead.
    b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    c. L-Bead: L-shaped; exposed long flange receives joint compound.
    d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    e. Expansion (control) joint.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M requirements.

1. Mold-Resistant Joint Compound: Use mold-resistant formulations with mold-resistant panel products.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.7 AUXILIARY MATERIALS

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C1002 unless otherwise specified or indicated on Drawings.

1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

C. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers as follows:

1. Non-Fire-Resistance-Rated Assemblies: Glass.
2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert number> percent.

D. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

E. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

A. Comply with ASTM C840 requirements.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations.

Comply with ASTM C919 requirements and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

K. Install sound-attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Gypsum Wallboard: As indicated on Drawings.
2. Gypsum Ceiling Board: Ceiling surfaces.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated on Drawings.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise specified or indicated on Drawings or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally unless otherwise indicated on Drawings or required by fire-resistance-rated assembly.

3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated on Drawings or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over studs or furring members and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated on Drawings or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports

with screws.

3.4 INSTALLATION OF TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim in accordance with manufacturer's written instructions.

B. Control Joints: Install control joints in accordance with ASTM C840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Install at outside corners.
2. LC-Bead: Install at exposed panel edges.
3. L-Bead: Install where indicated on Drawings.

3.5 APPLICATION OF JOINT TREATMENT MATERIALS

A. Finishing Panel Products: Treat joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare panel surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over panel joints, except for trim products specifically indicated as not intended to receive tape.

D. Interior Gypsum Board: Finish panels to levels indicated below and in accordance with ASTM C840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Where indicated on Drawings.
3. Level 3: .

    a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

    a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

E. Exterior Gypsum Board for Ceilings and Soffits: Finish in accordance with manufacturer's written instructions.

F. Glass-Mat Faced Panels: Finish in accordance with manufacturer's written instructions.

G. Cementitious Backer Units: Finish in accordance with manufacturer's written instructions.

3.6 PROTECTION

A. Protect adjacent surfaces from joint compound and promptly remove from floors and other non-gypsum board surfaces. Repair surfaces stained, marred, or otherwise damaged during gypsum board installation and finishing.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 29 00

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copper building wire.
2. Fire-alarm wire and cable.
3. Connectors and splices.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less. Aluminum conductors are not acceptable.

B. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

C. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

D. Conductor Insulation:

1. Type NM. Comply with UL 83 and UL 719.
2. Type THHN and Type THWN-2. Comply with UL 83.
3. Type THW and Type THW-2. Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
4. Type XHHW-2. Comply with UL 44.

2.2 FIRE-ALARM WIRE AND CABLE

A. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.

B. Signaling Line Circuits: Twisted, shielded pair, not less than No. 14 AWG size as recommended by system manufacturer.

2.3 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

C. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.
2. Type: One hole with standard barrels.
3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Branch Circuits:

1. Copper:

a. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533.13 "Conduits for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

3.3 INSTALLATION OF FIRE-ALARM WIRE AND CABLE

A. Comply with NFPA 72.

B. Wiring Method: Install wiring in metal pathway according to Section 280528 "Pathways for Electronic Safety and Security."

1. Fire-alarm circuits and equipment control wiring associated with fire-alarm system must be installed in a dedicated pathway system.

a. Cables and pathways used for fire-alarm circuits, and equipment control wiring associated with fire-alarm system, may not contain any other wire or cable.

C. Color-Coding: Color-code fire-alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire-alarm system junction boxes and covers red.

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material[and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors].

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

3.6 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

END OF SECTION 260519

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Grounding and bonding conductors.
2. Grounding and bonding clamps.
3. Grounding and bonding bushings.
4. Grounding and bonding hubs.
5. Grounding and bonding connectors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 GROUNDING AND BONDING CONDUCTORS

A. Equipment Grounding Conductor:

1. Standard Features: 600 V, **THHN/THWN-2 or THWN-2**, **copper** wire, green color, in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

2.3 GROUNDING AND BONDING CLAMPS

A. Description: Clamps suitable for attachment of grounding and bonding conductors to grounding electrodes, pipes, tubing, and rebar. Grounding and bonding clamps specified in this article are also suitable for use with communications applications.

2.4 GROUNDING AND BONDING BUSHINGS

A. Description: Bonding bushings connect conduit fittings, tubing fittings, threaded metal conduit, and unthreaded metal conduit to metal boxes and equipment enclosures, and have one or more bonding screws intended to provide electrical continuity between bushing and enclosure. Grounding bushings have provision for connection of bonding or grounding conductor and may or may not also have bonding screws.

PART 3 - EXECUTION

3.1 SELECTION OF GROUNDING AND BONDING PRODUCTS

A. Grounding and Bonding Connectors:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

3.2 INSTALLATION OF GROUNDING AND BONDING

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.
2. Electrical Maintenance: NFPA 70B.
3. Electrical Safety: NFPA 70E.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
5. Communications Work: BICSI N1.

END OF SECTION 260526

SECTION 26 05 33.13
CONDUITS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type EMT duct raceways and elbows.
2. Type ENT duct raceways and fittings.
3. Type HDPE and Type EPEC duct raceways and fittings.
4. Type ERMC duct raceways, elbows, couplings, and nipples.
5. Type FMC duct raceways.
6. Type FMT duct raceways.
7. Type LFMC duct raceways.
8. Type PVC duct raceways and fittings.
9. Fittings for conduit, tubing, and cable.
10. Joint compounds.
11. Solvent cements.

B. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" specifies nonmetallic underground conduit with conductors (Type NUCC).
2. Section 260543 "Underground Ducts and Raceways for Electrical Systems" specifies exterior duct banks, manholes, and underground utility construction.
3. Section 260553 "Identification for Electrical Systems" specifies electrical equipment labels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 TYPE EMT DUCT RACEWAYS AND ELBOWS

A. UL FJMX - Steel Electrical Metal Tubing (EMT-S) and Elbows:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

   a. UL CCN FJMX; including UL 797.

2. Standard Features:

   a. Material: Steel.
   b. Exterior Coating: **Zinc**.
   c. Interior Coating: **Zinc with organic top coating**.
   d. Minimum Trade Size: **trade size ¾"**.

2.3 TYPE FMC DUCT RACEWAYS

A. UL DXUZ - Steel Flexible Metal Conduit (FMC-S):

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

   a. UL CCN DXUZ; including UL 1.

2. Standard Features:

   a. Material: Steel.
   b. Minimum Trade Size: [**trade size ¾"**.

3. Other Available Features Required by the Project:

2.4 TYPE PVC DUCT RACEWAYS AND FITTINGS

A. UL DZYR - Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

   a. UL CCN DZYR; including UL 651.

2. Standard Features:

   a. Dimensional Specifications: Schedule 40.
   b. Minimum Trade Size: **trade size ¾"**.

B. UL FKAV - Fittings for Type EMT Duct Raceways:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. UL CCN FKAV; including UL 514B.

2. Standard Features:

    a. Material: **Steel.**
    b. Coupling Method: **Compression coupling**.
    c. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

C. UL ILNR - Fittings for Type FMC Duct Raceways:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. UL CCN ILNR; including UL 514B.

PART 3 - EXECUTION

3.1 SELECTION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturer's published instructions, comply with NFPA 70 for selection of duct raceways. Consult Architect for resolution of conflicting requirements.

B. Outdoors:

1. Exposed and Subject to Severe Physical Damage: **ERMC**.
2. Concealed Aboveground: **EMT**.
3. Direct Buried: **PVC-40**.

C. Indoors:
1. Concealed in Ceilings and Interior Walls and Partitions: **EMT**.
2. Damp or Wet Locations: **ERMC**.

3.2 INSTALLATION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturer's published instructions, comply with the following:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.

2. Electrical Safety: NFPA 70E.
3. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.
5. Type EMT-S: Article 358 of NFPA 70 and NECA NEIS 101.
6. Type LFMC: Article 350 of NFPA 70 and NECA NEIS 101.
7. Type LFNC: Article 342 of NFPA 70 and NECA NEIS 111.
8. Type PVC: Article 356 of NFPA 70 and NECA NEIS 111.
9. Consult Architect for resolution of conflicting requirements.

C. Special Installation Techniques:

1. General Requirements for Installation of Duct Raceways:

a. Complete duct raceway installation before starting conductor installation.
b. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft (0.6 m) above finished floor.
c. Make bends in duct raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
d. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
e. Support conduit within 12 inch of enclosures to which attached.
f. Install duct sealing fittings at accessible locations in accordance with NFPA 70 and fill them with listed sealing compound. For concealed duct raceways, install fitting in flush steel box with blank cover plate having finish similar to that of adjacent plates or surfaces. Install duct sealing fittings in accordance with NFPA 70.
g. Install devices to seal duct raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of duct raceways at the following points:

1) Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2) Where an underground service duct raceway enters a building or structure.
3) Conduit extending from interior to exterior of building.
4) Conduit extending into pressurized duct raceway and equipment.
5) Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
6) Where otherwise required by NFPA 70.

h. Install duct raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.

1) Termination fittings with shoulders do not require two locknuts.

i. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to trade size 1-1/4" and insulated throat metal bushings on trade size 1-1/2" and larger conduits terminated with locknuts.

2. Duct Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.

   a. ERMC-S-PVC: Provide only fittings listed for use with this type of conduit. Patch and seal joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Provide sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
   b. EMT: Provide **setscrew** fittings. Comply with NEMA FB 2.10.
   c. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.

3. Duct Raceways Penetrating Rooms or Walls with Acoustical Requirements: Seal duct raceway openings on both sides of rooms or walls with acoustically rated putty **or firestopping**.
4. Identification: Provide labels for conduit assemblies, duct raceways, and associated electrical equipment.

D. Interfaces with Other Work:

1. Firestop penetrations of fire-rated floor and wall assemblies.
2. Provide conduit hangers and supports.

3.3 CLEANING

A. Verify that bentonite or other drilling fluids are contained and removed, and site is restored to its original or improved condition.

3.4 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533.13

SECTION 26 05 33.16
BOXES AND COVERS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Nonmetallic outlet boxes, device boxes, rings, and covers.
3. Junction boxes and pull boxes.
4. Cover plates for device boxes.

B. Related Requirements:

1. Section 260526 "Grounding and Bonding for Electrical Systems" specifies grounding and bonding referenced by this Section.
2. Section 260553 "Identification for Electrical Systems" specifies electrical equipment labels and warning signs installed by this Section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

A. UL QCIT - Metallic Outlet Boxes and Covers:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN QCIT; including UL 514A.

2. Standard Features:

a. Box having pryout openings, knockouts, threaded entries, or hubs in either the sides or the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
b. Material: **Sheet steel**.

B. UL QCIT - Metallic Device Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN QCIT; including UL 514A.

2. Standard Features:

a. Box with provisions for mounting wiring device directly to box.
b. Material: **Sheet steel**.

2.3 JUNCTION BOXES AND PULL BOXES

A. UL BGUZ - Indoor Sheet Metal Junction and Pull Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN BGUZ; including UL 50 and UL 50E.

2. Standard Features:

a. Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

B. UL BGUZ - Outdoor Cast-Metal Junction and Pull Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN BGUZ; including UL 50 and UL 50E.

2. Standard Features:

a. Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
b. Degree of Protection: **Type 3R**.

2.4 COVER PLATES FOR DEVICE BOXES

A. UL QCIT or QCMZ - Metallic Cover Plates for Device Boxes:

1. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. UL CCN QCIT or UL CCN QCMZ; including UL 514D.

2. Standard Features:

a. Cover plate-Securing Screws: Metal with head color to match cover plate finish.
b. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
c. Cover Plate Material: **0.032 inch thick, Type 302/304 non-magnetic stainless steel with brushed finish**.

PART 3 - EXECUTION

3.1 SELECTION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.

B. Degree of Protection:

1. Outdoors:

a. **Type 3R** unless otherwise indicated.

2. Indoors:

a. Type 1 unless otherwise indicated.

3.2 INSTALLATION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:

1. Electrical Construction: ICC IBC, ICC IFC, NFPA 1, NFPA 70, and NECA NEIS 1.

2. Electrical Safety: NFPA 70E.
3. Commissioning of Active and Passive Fire Protection Features: NFPA 3 and NFPA 4.
4. Grounding and Bonding: NECA NEIS 331 and Article 250 of NFPA 70.

3.3 FIELD QUALITY CONTROL OF BOXES AND COVERS

A. Administrant for Fire-Alarm Tests and Inspections:
   1. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.

B. Nonconforming Work:

   1. Boxes and covers will be considered defective if they do not pass tests and inspections.
   2. Remove and replace defective units and retest.

C. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

3.4 CLEANING

A. Remove construction dust and debris from boxes before installing cover plates, covers, and hoods.

3.5 PROTECTION

A. After installation, protect boxes from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 260533.16

SECTION 26 05 43
UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type PVC raceways and fittings.
2. Solvent cements.
3. Duct accessories.
4. Handholes and boxes for exterior underground wiring.
5. Manholes for exterior underground wiring.
6. Utility structure accessories.
7. Duct sealing.

B. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" specifies nonmetallic underground conduit with conductors (Type NUCC).
2. Section 260553 "Identification for Electrical Systems" specifies underground-line warning tape and concrete cable routing markers (warning planks).

PART 2 - PRODUCTS

2.1 TYPE PVC RACEWAYS AND FITTINGS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 651 and UL CCN DZYR.

B. Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:

1. Dimensional Specifications: Schedule 40.
2. Options:

a. Minimum Trade Size: **trade size ¾”**.

2.2 FITTINGS FOR CONDUIT, TUBING, AND CABLE

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

B. Metallic Fittings for Type PVC, Raceways:

1. General Characteristics: UL 514B and UL CCN DWTT.

2.3 SOLVENT CEMENTS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: As recommended by conduit manufacturer in accordance with UL 514B and UL CCN DWTT.

2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:

a. ASTM C858 for design and manufacturing processes.
b. SCTE 77.

B. Precast Concrete Handholes and Boxes:

1. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover must form top of enclosure and must have load rating consistent with that of handhole or box.
2. Configuration: Units must be designed for flush burial and have **closed** bottom unless otherwise indicated.
3. Frame and Cover:
   a. Weatherproof steel frame, with steel cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.

2.5 MANHOLES FOR EXTERIOR UNDERGROUND WIRING

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:

a. ASTM C858 for design and manufacturing processes.

b. SCTE 77.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate layout and installation of duct, duct bank, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in field. Notify Architect if there is conflict between areas of excavation and existing structures or archaeological sites to remain.

3.2 SELECTION OF UNDERGROUND DUCTS

A. Duct for Electrical Branch Circuits: **PVC-40**, direct buried unless otherwise indicated.

3.3 EARTHWORK

Coordinate this article with Drawings.

A. Excavation and Backfill: Comply with Section 312000 "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

3.4 INSTALLATION OF DUCTS AND DUCT BANKS

A. Reference Standards:

1. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NEMA TCB 2 for installation of underground ducts and duct banks.
2. Consult Architect for resolution of conflicting requirements.

3.5 FIELD QUALITY CONTROL

A. Field tests and inspections must be witnessed by the School District.

B. Nonconforming Work:

1. Underground ducts, raceways, and structures will be considered defective if they do not pass tests and inspections.
2. Correct deficiencies and retest as specified above to demonstrate compliance.

END OF SECTION 260543

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Labels.
2. Extruded insulating tubing.
3. Bands.
4. Tapes and stencils.
5. Tags.
6. Signs.
7. Cable ties.

PART 2 - PRODUCTS

2.1 LABELS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Listing Criteria: UL CCN PGDQ2 for components; including UL 969.

B. UL PGDQ2 - Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

2.2 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mil thick by 1 to 2 inch wide; compounded for outdoor use.

C. Underground-Line Warning Tape:

1. Tape:

a. Recommended by manufacturer for method of installation and suitable to identify and locate underground **communications** utility lines.
b. Printing on tape must be permanent and may not be damaged by burial operations.
c. Tape material and ink must be chemically inert and not be subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

2. Color and Printing:
   a. Inscriptions for Orange Tapes: **"CAUTION BURIED FIRE ALARM LINE BELOW".**

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 SELECTION OF COLORS AND IDENTIFICATION MARKINGS

A. Comply with 29 CFR 1910.144 for color identification of hazards, and the following:

1. Fire-protection **and fire-alarm** equipment**, including raceways,** must be finished, painted, or suitably marked safety red.

B. Color-Coding for Phase- and Voltage-Level Identification, 1000 V or Less: Use colors listed below for ungrounded **branch-circuit** conductors.

1. Color must be factory applied.
2. Colors for 208Y/120 V Circuits:
   a. Phase A: Black.
   b. Phase B: Red.
   c. Phase C: Blue.
3. Color for Neutral: **White**.
4. Color for Equipment Ground: **Green**.

3.3 INSTALLATION

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

END OF SECTION 260553

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Preparing subgrades for walks, pavements, turf and grasses, and plants..
2. Subbase course for concrete walks and pavements.
3. Subbase course and base course for asphalt paving.
4. Subsurface drainage backfill for walls and trenches.
5. Excavating and backfilling trenches for utilities and pits for buried utility structures.
6. Detectable warning tape.

B. Related Requirements:

1. Section 013233 "Photographic Documentation" for recording preexcavation and earth-moving progress.
2. Section 015723 "Temporary Storm Water Pollution Control."
3. Section 311000 "Site Clearing" for site stripping, grubbing, stripping[and stockpiling] topsoil, and removal of above- and below-grade improvements and utilities.
4. Section 329113 "Soil Preparation" for planting soils.

1.2 UNIT PRICES

A. Rock Measurement: Volume of rock actually removed, measured in original position, but not to exceed the following. Unit prices for rock excavation include replacement with approved materials.

1. 24 inches outside of concrete forms other than at footings.
2. 12 inches outside of concrete forms at footings.
3. 6 inches outside of minimum required dimensions of concrete cast against grade.
4. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
5. 6 inches beneath bottom of concrete slabs-on-grade.
6. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including

haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than [10 feet]<Insert dimension> in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, will be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock:

1. Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or [3/4 cu. yd.]<Insert volume> for footing, trench, and pit excavation that cannot be removed by rock-excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

a. Equipment for Footing, Trench, and Pit Excavation: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- maximum-width, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom.
b. Equipment for Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket.

I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other fabricated stationary features constructed above or below the ground surface.

J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

L. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct preexcavation conference at Project site.

1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

a. Personnel and equipment needed to make progress and avoid delays.
b. Coordination of Work with utility locator service.
c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
d. Extent of trenching by hand or with air spade.
e. Field quality control.
f. <Insert agenda items>.

1.5 ACTION SUBMITTALS

A. Product Data: For each type product.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D1557.
3. Gradation according to ASTM D 442
4. Electrical Resistivity according to Caltrans Method (CT) 643.
5. Sulfate and chloride contents according to Caltrans Test Method (CT) 417 and 422.
6. Expansion Index according to ASTM D 4829.

C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.7 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.8 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by District Construction Manager.

C. Utility Locator Service:Retain a professional [utility locator service]["Miss Utility"]["Call Before You Dig"]["Dig Safe System"]["One Call"]<Insert name> and have all existing underground utilities located and surface-identified before beginning earth-moving operations.

D. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 015000 "Temporary Facilities and Controls" and Section 311000 "Site Clearing" are in place.

E. Do not commence earth-moving operations until plant-protection measures are in place.

F. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

G. Do not direct vehicle or equipment exhaust towards protection zones.

H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

I. Existing Utilities: Do not interrupt utilities serving facilities occupied by District or others unless permitted in writing by District and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify District not less than five days in advance of proposed utility interruptions.
2. Do not procced with utility interruptions without District's written permission.

J. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: <Insert value>.
2. Plasticity Index: <Insert value>.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of [washed]crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.

J. Sand: ASTM C33/C33M; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water

accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXPLOSIVES

A. Explosives:

1. Do not use explosives.
2. Obtain written permission from authorities having jurisdiction before bringing explosives to Project site or using explosives on Project site.

    a. Perform blasting without damaging adjacent structures, property, or site improvements.
    b. Perform blasting without weakening the bearing capacity of rock subgrade and with the least-practicable disturbance to rock to remain.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.

    a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent

construction without exceeding the following dimensions:

a. 24 inches outside of concrete forms other than at footings.
b. 12 inches outside of concrete forms at footings.
c. 6 inches outside of minimum required dimensions of concrete cast against grade.
d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
e. 6 inches beneath bottom of concrete slabs-on-grade.
f. [6 inches]<Insert dimension> beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms:

1. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

a. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
c. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
d. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

2. Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to

allow for bedding course. Hand-excavate deeper for bells of pipe.

a. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.7 SUBGRADE INSPECTION

A. Notify Project Inspector when excavations have reached required subgrade. The Project Inspector will arrange for the District's Testing Agency to review the subgrade.

B. If Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.8 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by District Construction Manager.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by District Construction Manager.

3.9 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.11 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Backfill voids with satisfactory soil while removing shoring and bracing.

E. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with

utilities testing.

F. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.12 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact

top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus [1/2 inch]<Insert dimension>.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 SUBSURFACE DRAINAGE

A. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course and base course under pavements and

walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material over subbase course under hot-mix asphalt pavement.
3. Shape subbase course and base course to required crown elevations and cross-slope grades.
4. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
5. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D1557.

3.18 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

D. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved

degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 20 00

SECTION 32 12 16 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hot-mix asphalt paving.
2. Hot-mix asphalt overlay.
3. Cold milling of existing asphalt pavement.
4. Hot-mix asphalt patching.
5. Asphalt curbs.
6. Asphalt surface treatments.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for demolition and removal of existing asphalt pavement.
2. Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
3. Section 321313 "Concrete Paving" for concrete pavement and for separate concrete curbs, gutters, and driveway aprons.
4. Section 321373 "Concrete Paving Joint Sealants" for joint sealants and fillers at pavement terminations.

1.2 ACTION SUBMITTALS

A. Product Data: Include technical data and tested physical and performance properties.

1. Herbicide.
2. Paving geotextile.
3. Joint sealant.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For paving-mix manufacturer.

B. Material Certificates: Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

1. Aggregates.
2. Asphalt binder.
3. Asphalt cement.
4. Cutback prime coat.
5. Emulsified asphalt prime coat.

6. Tack coat.
7. Fog seal.
8. Undersealing asphalt.

C. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by the California Department of Transportation (CalTrans).

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the California Department of Transportation (CalTrans) of California for asphalt paving work.

1. Comply with requirements of local jurisdictions where more stringent than CalTrans requirements.
2. Measurement and payment provisions and safety program submittals included in CalTrans standard specifications do not apply to this Section.
3. Comply with the applicable standards of the San Diego County Air Pollution Control District for quantities of volatile organic compounds (VOC's) used in all materials.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F.
2. Tack Coat: Minimum surface temperature of 60 deg F.
3. Slurry Coat: Comply with weather limitations in ASTM D3910.
4. Asphalt Base Course[and Binder Course]: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Base Coarse Aggregate: Class 2 Aggregate Base mineral aggregate, 3/4-inch maximum size, as specified in CalTrans Standard Specifications.

C. Asphalt Aggregate: Type B Aggregate, as specified in CalTrans Standard Specifications.

1. 3/4-inch maximum size for base course
2. 1/2-inch maximum size for surface course.
3. 3/8-inch fine for surface course for playgrounds and similar areas.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: ASTM D6373 binder designation PG 58-28.

B. Tack Coat: ASTM D977 emulsified asphalt, or ASTM D2397/D2397M cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

C. Seal Coat: Emulsified asphalt with a minimum 2 percent to 3 percent latex or copolymer added with 2 to 4 lbs of grade #30 silica sand added per gallon and mechanically agitated.

D. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled asphalt shingles from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.

B. Herbicide: Commercial chemical for weed control, registered by the EPA, and not classified as "restricted use" for locations and conditions of application. Provide in granular, liquid, or wettable powder form.

C. Sand: ASTM D1073, Grade No. 2 or No. 3.

D. Paving Geotextile: AASHTO M 288 paving fabric; nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

2.4 MIXES

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes ; designed in accordance with procedures in AI MS-2, "Asphalt Mix Design Methods"; and complying with the following requirements:

1. Comply with CalTrans Standard Specifications.
2. Base Course: Comply with CalTrans Standard Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

3.3 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

1. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
2. Control rate of milling to prevent tearing of existing asphalt course.
3. Repair or replace curbs, driveway aprons, manholes, and other construction damaged during cold milling.
4. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
5. Handle milled asphalt material in accordance with approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."
6. Keep milled pavement surface free of loose material and dust.
7. Do not allow milled materials to accumulate on-site.

3.4 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section

to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.

1. Undersealing: Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.
2. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

C. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd..

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

D. Placing Single-Course Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

E. Placing Two-Course Patch Material: Partially fill excavated pavements with hot-mix asphalt base course mix and, while still hot, compact. Cover asphalt base course with compacted layer of hot-mix asphalt surface course, finished flush with adjacent surfaces.

3.5 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.6 SURFACE PREPARATION

A. Ensure that prepared subgrade has been proof-rolled and is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.

B. Herbicide Treatment: Apply herbicide in accordance with manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

D. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

E. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd..

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.7 INSTALLATION OF PAVING GEOTEXTILE

A. Apply asphalt binder uniformly to existing pavement surfaces at a rate of 0.20 to 0.30 gal./sq. yd..

B. Place paving geotextile promptly in accordance with manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.

C. Protect paving geotextile from traffic and other damage, and place hot-mix asphalt overlay the same day.

3.8 HOT-MIX ASPHALT PLACEMENT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
2. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.9 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints [using either "bulkhead" or "papered" method in accordance with AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."][as indicated on Drawings.]<Insert joint requirement.>
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.10 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density, Marshall Test Method: 96 percent of reference laboratory density in accordance with ASTM D6927 or AASHTO T 245, but not less than 94 percent or greater than 100 percent.
2. Average Density, Rice Test Method: 92 percent of reference maximum theoretical density in accordance with ASTM D2041/D2041M, but not less than 90 percent or greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.11 ASPHALT CURBS

A. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread hot-mix asphalt at a minimum temperature of 250 deg F.

1. Hot-Mix Asphalt: Same as pavement surface-course mix.

B. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed

materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

3.12 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.
2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. Asphalt Traffic-Calming Devices: Compact and form asphalt to the shapes indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.13 SURFACE TREATMENTS

A. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

B. Slurry Seals: Apply slurry coat in a uniform thickness in accordance with ASTM D3910 and allow to cure.

1. Roll slurry seal to remove ridges and provide a uniform, smooth surface.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: District will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined in accordance with ASTM D3549/D3549M.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. Replace and compact hot-mix asphalt where core tests were taken.

E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.15 WASTE HANDLING

A. General: Handle asphalt-paving waste in accordance with approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."

END OF SECTION 32 12 16

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes concrete paving including the following:

1. Roadways.
2. Curbs and gutters.
3. Walks.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.
2. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.

6. Applied finish materials.
7. Bonding agent or epoxy adhesive.
8. Joint fillers.

1.5 REGULATORY REQUIREMENTS

A. Portland cement concrete paving and concrete finishes:

1. Portland cement concrete paving shall be stable, firm, and slip resistant and shall comply with CBC Sections 11B-302 and 11B-403.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Comply with local governing regulations if more stringent than herein specified.

B. Comply with applicable provisions of the following, except as otherwise indicated:

1. Applicable portions of the CBC.
2. The U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities.
3. Conform to applicable City codes for paving work on public property.

C. Continuous surfaces, including walks and sidewalks, shall have a continuous common surface, not interrupted by abrupt changes in level exceeding 1/2-inch.

D. All concrete paving with a slope less than 5 percent shall have a medium broom finish, and all concrete paving with a slope equal to or greater than 5 percent shall have a slip resistant heavy broom finish.

E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

F. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

G. Concrete Testing Service: Engage a qualified independent testing agency to design concrete mixes.

1. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
2. Qualification requirements are in addition to those specified in Section 01 40 02 "Quality Requirements / Contractor Laboratory."

1.7 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.[Do not use notched and bent forms.]

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, fabricated from as-drawnsteel wire into flat sheets.

B. Epoxy-Coated Welded-Wire Reinforcement: ASTM A884/A884M, Class A, plain steel.

C. Reinforcing Bars: ASTM A615/A615M, Grade 60; deformed.

D. Galvanized Reinforcing Bars: ASTM A767/A767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A615/A615M, Grade 60 deformed bars.

E. Epoxy-Coated Reinforcing Bars: ASTM A775/A775M or ASTM A934/A934M; with ASTM A615/A615M, Grade 60 deformed bars.

F. Steel Bar Mats: ASTM A184/A184M; with ASTM A615/A615M, Grade 60 deformed bars; assembled with clips.

G. Plain-Steel Wire: ASTM A1064/A1064M, as drawn.

H. Deformed-Steel Wire: ASTM A1064/A1064M.

I. Epoxy-Coated-Steel Wire: ASTM A884/A884M, Class A; coated, plain.

J. Epoxy-Coated, Joint Dowel Bars: ASTM A775/A775M; with ASTM A615/A615M, Grade 60 plain-steel bars.

K. Tie Bars: ASTM A615/A615M, Grade 60; deformed.

L. Hook Bolts: ASTM A307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

M. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

N. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

O. Zinc Repair Material: ASTM A780/A780M.

2.4 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C150/C150M, gray portland cement Type II, low alkali.
2. Fly Ash: ASTM C618, or Class F.

B. Normal-Weight Aggregates: ASTM C33/C33M, [Class 4S][Class 4M][Class 1N]<Insert class>, uniformly graded. Provide aggregates from a single source[with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials].

1. Fine Aggregate:Minimum sand equivalent (ASTM D 2419) is 80..
2. Coarse Aggregate: Minimum cleanness value (CalTrans Test cv 227) is 80.

C. Air-Entraining Admixture: ASTM C260/C260M.

D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.

2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.

E. Water: Potable and complying with ASTM C94/C94M.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Euclid Chemical Company (The); an RPM company.
c. L&M Construction Chemicals, Inc.
d. Or Equal.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Dayton Superior.
c. L&M Construction Chemicals, Inc.
d. Or Equal.

2.6 RELATED MATERIALS

A. Joint Fillers: [ASTM D1751, asphalt-saturated cellulosic fiber][ASTM D1752, cork or self-expanding cork][or][ASTM D8139, semirigid, closed-cell polypropylene foam] in preformed strips.

B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

C. Bonding Agent: ASTM C1059/C1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

D. Epoxy-Bonding Adhesive: ASTM C881/C881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

E. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8-to 1/4-inch.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ChemMasters, Inc.
b. Scofield, L. M. Company.
c. Sika Corporation.
d. Or Equal.

2.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience. Mix designs are subject to approval of the District's testing laboratory.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method. Do not use District's field quality control testing agency for this purpose. At least one test shall be within one year from date of submittal.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Pozzolan:15 percent.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content, 1-inch Nominal Maximum Aggregate Size: 3 percent plus or minus 1-1/2 percent.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved sample, if applicable..

G. Concrete Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 3000 psi.
2. Maximum W/C Ratio at Point of Placement: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction[and repeat in perpendicular direction]. Limit vehicle speed to 3 mph.
2. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 312000 "Earth Moving."

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

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 INSTALLATION OF STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D3963/D3963M.

F. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.
3. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of the concrete thickness, as follows[, to match jointing of existing adjacent concrete paving]:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
2. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom,

perpendicular to line of traffic.

3.8 SPECIAL FINISHES

A. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft. of dampened, slip-resistive aggregate over paving surface in two applications. Tamp aggregate flush with surface using a steel trowel, but do not force below surface.
2. Uniformly distribute approximately two-thirds of slip-resistive aggregate over paving surface with mechanical spreader, allow to absorb moisture, and embed by power floating. Follow power floating with a second slip-resistive aggregate application, uniformly distributing remainder of material at right angles to first application to ensure uniform coverage, and embed by power floating.
3. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
4. After curing, lightly work surface with a steel-wire brush or abrasive stone and water to expose nonslip aggregate.

3.9 INSTALLATION OF DETECTABLE WARNINGS

A. Blockouts: Form blockouts in concrete for installation of detectable paving units specified in Section 321726 "Tactile Warning Surfacing."

1. Tolerance for Opening Size: Plus 1/4 inch, no minus.

B. Cast-in-Place Detectable Warning Tiles: Form blockouts in concrete for installation of tiles specified in Section 321726 "Tactile Warning Surfacing." Screed surface of concrete where tiles are to be installed to elevation, so that edges of installed tiles will be flush with surrounding concrete paving. Embed tiles in fresh concrete to comply with Section 321726 "Tactile Warning Surfacing" immediately after screeding concrete surface.

3.10 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing moisture-retaining-cover curing curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.11 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/4 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.12 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172/C172M will be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C39/C39M; test one specimen at seven days and two specimens at 28 days.

a. A compressive-strength test to be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Test results to be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests to contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

D. Additional Tests: Testing and inspecting agency will make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

E. Concrete paving will be considered defective if it does not pass tests and inspections.

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

3.13 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as

possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13

SECTION 32 13 73 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Expansion and contraction joints within Portland cement concrete pavement..
2. Cold-applied joint sealants.
3. Joint-sealant backer materials.
4. Primers.

1.2 ACTION SUBMITTALS

A. Product Data:

1. For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of joint sealant and accessory.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.5 FIELD CONDITIONS

A. 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.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain joint sealants from single manufacturer for each sealant type.

2.2 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backer materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

C. Cold-Applied Joint Sealants

1. Single-Component, Nonsag, Low-Modulus, Neutral-Curing, Silicone Joint Sealant for Concrete: ASTM D 5893/D 5893M, Type NS.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Roadsaver Silicone-SL; Crafco Inc.
2) 888: Dow Corning Corporation.
3) Pecora Corporation.
4) Or Equal.

2. Multicomponent, Pourable, Urethane, Chemically Curing Elastomeric Formulation Jet-Fuel-Resistant Joint Sealant for Concrete: ASTM C 920; Type M; Grade P; Class 12-1/2; for Uses T, M, and, as applicable to joint substrates indicated, O.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1) Vulkem 202; Mameco International.
2) Urexpan NR-300; Pecora Corporation.
3) Sealtight Gardox; W.R. Meadows, Inc.
4) Or Equal.

2.3 JOINT-SEALANT BACKER MATERIALS

A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

B. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D5249, Type 3, of

diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

C. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.4 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints 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.

3.2 PREPARATION

A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

B. Joint Priming: Prime joint substrates where indicated or 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.

3.3 INSTALLATION OF JOINT SEALANTS

A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions.

C. Install joint-sealant backers to support joint 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 joint-sealant backer materials.
2. Do not stretch, twist, puncture, or tear joint-sealant backer materials.
3. Remove absorbent joint-sealant backer materials that have become wet before sealant application and replace them with dry materials.

D. Install joint sealants immediately following backer material installation, using proven techniques that comply with the following:

1. Place joint sealants so they fully contact 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.

E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants in accordance with the following requirements 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 joint sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING AND PROTECTION

A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

B. 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 and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

END OF SECTION 32 13 73

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
NATIONAL SCHOOL DISTRICT

SYMBOLS LEGEND

LOBBY 256B	ROOM NAME AND ROOM NUMBER	1 S#B	WALL TAGS - REFER TO SHEET A-111
1234	KEYNOTE TAG - NEW WORK	1	DOOR TAGS - REFER TO SHEET A-501
1234	KEYNOTE TAG - DEMOLITION WORK	XX	WINDOW TAGS - REFER TO SHEET A-501
FEC	FIRE EXTINGUISHER CABINET - SEE DETAIL	℄	CENTER LINE
1 / 4 SHEET 2 / 3	SHEET NUMBER; ELEVATION CALLOUT; VIEW NUMBER, TYP.	A-B	GRID LINES; GRID HEAD
1 A-444 — 1 A-444	BUILDING SECTION TAG		
1 A-444	WALL SECTION TAG		
1 A-444	DETAIL TAG		
1 A-444	DETAIL CALLOUT/TAG		
DESCRIPTION X'-X"	FINISH FLOOR LEVEL SYMBOL		
DESCRIPTION X'-X"	SPOT ELEVATION		
10'-0"	DIMENSION		
120"	CLEAR FLOOR SPACE DIMENSION		
10'-0"	FACE OF FINISH DIMENSION		
888 24 24 24 MODIFICATIONS	CASEWORK TAG		

APPLICABLE CODES & STANDARDS

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR

2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR

2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 2, TITLE 24 CCR

2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR

2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR

2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR

2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR

2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR

2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

PROJECT DIRECTORY

CLIENT
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Tel:
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POWAY, CA 92064
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Email: steven.garcia@rizzaengineering.com

SCOPE OF WORK

PROJECT INLCUDES THE FOLLOWING SCOPE ITEMS:

- PROVIDE FIRE ALARM MODIFICATION DESIGN FOR (3) EXISTING PORTABLE CLASSROOM BUILDINGS INCLUDING CONDUIT ROUTING FROM EXISTING BUILDING A TO (3) EXISTING PORTABLE CLASSROOM BUILDINGS.

DSA APPROVAL OF THIS BUILDING SHALL NOT BE CONSTRUED AS THE CERTIFICATION OF COMPLIANCE FOR THIS BUILDING AS REQUIRED BY THE FIELD ACT AND EDUCATION CODE SECTION 17280-17316 AND SECTIONS 81130-81147.

PROJECT DATA

BUILDING	H22, H23, AND H24
CONSTRUCTION TYPE	TYPE VB
OCCUPANCY	E
SPRINKLERED	NO
GROSS AREA	H22 = 1,040 SF, H23 = 1,040 SF, H24 = 1,040 SF
SITE AREA	349,219 SF (8.02 ACRES)
FIRE SEVERITY ZONE	NONE

SHEET INDEX

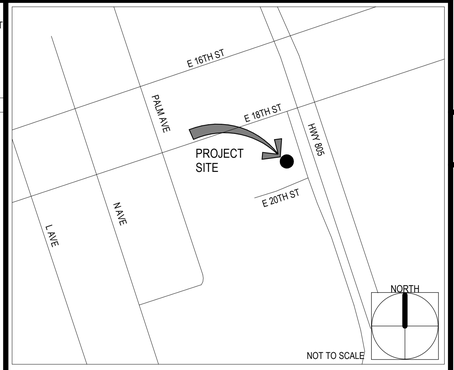
DEFERRED APPROVALS

INSTALLATION OF DEFERRED APPROVAL ITEMS SHALL NOT BE STARTED UNTIL DETAILED PLANS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR ENGINEER WHO HAS BEEN DELEGATED THE RESPONSIBILITY OF COVERING THE WORK SHOWN ON A PARTICULAR PLAN OR SPECIFICATION, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. DEFERRED ITEMS SHALL BE COMPLETED PRIOR TO THE OCCUPANCY OF BUILDINGS AFFECTED BY THE DEFERRED WORK.

DEFERRED APPROVAL ITEMS ARE AS FOLLOWS:

ITEM 1	NO DEFERRED APPROVALS

VICINITY MAP



DSA GENERAL NOTES

1. ALL WORK SHALL CONFORM TO 2022 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-3338, PART 1, TITLE 24, CCR.
3. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. THE INSPECTOR OF RECORD FOR THIS PROJECT SHALL BE CLASS 2.
4. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
5. THE INTENT OF THESE DRAWINGS AND INSPECTIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WIHT TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCR), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. SECTION 4-317(C), PART 1, TITLE 24, CCR.
6. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENT HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

SITE SAFETY PLAN

A WRITTEN SITE SAFETY PLAN IN COMPLIANCE WITH CFC 3303.1.1 MUST BE PREPARED AND AVAILABLE ON SITE PRIOR TO COMMENCEMENT OF ANY MOBILIZATION, DEMOLITION, AND/OR CONSTRUCTION.

STATEMENT OF GENERAL CONFORMANCE

Statement of General Conformance

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS,
INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

(Application No. 04-123922 **File No.** _____**)**

[X] The drawings or sheets listed on the cover or index sheet
[ ] This drawing, page of specifications/calculations

have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has been examined by me for:

1) design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) coordination with my plans and specifications and is acceptable for incorporation into the construction of this project.

The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344" of Title 24, Part 1. *(Title 24, Part 1, Section 4-317 (D))*

I certify that: [X] All drawings or sheets listed on the cover or index sheet [ ] This drawing or page

[X] is/are in general conformance and [X] have been coordinated	[ ] is/are in general conformance and [ ] have been coordinated
10/09/2024	
Signature **Date**	**Signature** **Date**
Architect or Engineer designated to be in general responsible charge	**Architect or Engineer delegated responsibility for this portion of the work.**
Keith Pittsford	
Print Name C-20589 07/31/2025	**Print Name**
License Number **Expiration Date**	**License Number** **Expiration Date**

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123922 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024
DSA

CONSULTANT

STAMP
KEITH PITTSFORD
No. C-20589
REN. JUL 31, 25
LICENSED ARCHITECT
STATE OF CALIFORNIA

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

TITLE SHEET / SHEET INDEX

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
1900 E 18TH ST
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
TS-1

FIRE & LIFE SAFETY NOTES

1. ALL INTERIOR FINISHES SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 8, PART 2, TITLE 24, CCR. ALL FINISHES SHALL HAVE A FLAME SPREAD INDEX OF 75 OR LESS AND A SMOKE-DEVELOPED INDEX NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E84. AND SHALL HAVE A CLASS A OR B FLAME SPREAD INDEX PER TABLE 803.11.
2. ALL INSULATION MATERIALS INSTALLED WITHIN ROOF - CEILING ASSEMBLIES, ATTICS, OR WALLS SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
3. ALL RATED DOORS SHALL BE POSITIVE LATCHING.
4. ALL FIRE RATED DOOR ASSEMBLIES SHALL BE PROVIDED WITH APPROVED GASKETING MATERIAL INSTALLED TO PROVIDE A SEAL WHERE THE DOOR MEETS THE STOP ON BOTH SIDES AND ACROSS THE TOP.
5. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE FOR ALL RATED OPENING ASSEMBLIES.
6. PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF ASTM-E119 AND IN COMPLIANCE WITH THE PROJECT MANUAL.
7. ALL ELECTRICAL, MECHANICAL, AND PLUMBING PENETRATIONS, INCLUDING CONDUITS AND PIPING, THROUGH FIRE RATED WALL, FLOOR AND CEILING ASSEMBLIES SHALL BE TIGHTLY AND SOLIDLY SEALED WITH FIRESTOPPING COMPLYING WITH ASTM E814. WHERE ITEM PENETRATES AN AREA SEPARATION WALL, THE SECTION PASSING THROUGH THE WALL SURFACE AND THE FIXTURE CONNECTIONS THERETO SHALL BE ONLY OF METAL.
8. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A-10BC WITHIN A 75 FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR.
9. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 1-BC FOR ELECTRICAL ROOMS, MECHANICAL ROOMS, KITCHENS, AND TRASH ROOMS.
10. PROVIDE AN APPROPRIATE NUMBER OF PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 4A-60BC FOR PROTECTION DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY PEDESTRIAN PROTECTION AS REQUIRED BY LOCAL CODE AND SPECIFICATION.
12. DO NOT BLOCK EXITS AT ANY TIME.
13. PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS OF FIRE RATED WALLS, FLOORS, SHAFTS AND CEILINGS. COMBINATION FIRE/SMOKE DAMPERS SHALL BE USED AT DUCT PENETRATIONS OF RATED CORRIDOR WALLS.
14. FIRE DAMPER DETAILS SHOWN FOR REFERENCE ONLY. FIRE DAMPERS SHALL BE APPROVED AND LISTED BY STATE FIRE MARSHAL. INSTALL STRICTLY PER MANUFACTURER'S PRINTED INSTRUCTIONS AND LISTING APPROVAL. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITIES.
15. DUCT INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS LOCATED IN BUILDINGS SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED.
16. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF THE CALIFORNIA ELECTRICAL CODE, STANDARDS AS DEFINED IN CHAPTER 35 CALIFORNIA BUILDING CODE AND APPLICABLE NFPA STANDARDS.
17. THE CONTRACTOR SHALL PROVIDE PROTECTION COMPLYING WITH TITLE 8, CCR, DURING WELDING. FURTHER PROTECTION SHALL BE PROVIDED TO ANY OCCUPANTS AND THE PUBLIC WITH PORTABLE SOLID VISION BARRICADES AROUND LOCATION WHERE WELDING IS BEING PERFORMED. PROVIDE SIGNS WARNING AGAINST LOOKING AT WELDING WITHOUT PROPER EYE PROTECTION OR EQUIVALENT.
18. FIRE SPRINKLER SYSTEM AND AUTOMATIC EXTINGUISHING SYSTEM IS A DEFERRED APPROVAL SYSTEM OF THE WORK. FIRE SPRINKLER SYSTEM SHOWN ON THE DRAWINGS AND SPECIFIED IN THE PROJECT MANUAL SHALL BE USED AS THE BASIS FOR BIDDING AND PREPARATION OF DEFERRED APPROVAL SHOP DRAWINGS. IT SHALL NOT BE USED FOR CONSTRUCTION. DEFERRED APPROVAL SHOP DRAWINGS SHALL BE SUBMITTED TO DIVISION OF STATE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. DRAWINGS SHALL BE STAMPED AND SIGNED BY A C-16 CONTRACTOR, LICENSED FIRE PROTECTION ENGINEER, LICENSED MECHANICAL ENGINEER OR LICENSED CIVIL ENGINEER. PROVIDE TESTING IN THE PRESENCE OF THE ENFORCING AGENCY AT VARIOUS STAGES AND UPON COMPLETION AS SPECIFIED AND AS DIRECTED BY THE ENFORCING AGENCY. THE ARCHITECT WILL REVIEW SHOP DRAWINGS FOR HEAD TYPE, LOCATION CONFLICT AND SEISMIC RESTRAINT ONLY.

ACCESSIBILITY NOTES

1. PATH OF TRAVEL (P.O.T.) AS INDICATED IS A BARRIER FREE ACCESS WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" BEVELED AT 1:2 MAXIMUM SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL AND IS AT LEAST 48" WIDE. SURFACE IS SLIP RESISTANT, STABLE, FIRM, AND SMOOTH. CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5% UNLESS OTHERWISE INDICATED. (P.O.T.) SHALL MAINTAIN FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM (11B-307.4) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM THE WALL AND ABOVE 27" AND LESS THAN 80" (11B-307.2). CONTRACTOR TO VERIFY THAT ALL BARRIERS IN THE PATH OF TRAVEL HAVE BEEN REMOVED OR WILL BE REMOVED UNDER THIS PROJECT, AND PATH OF TRAVEL COMPLIES WITH DIVISION 4, CHAPTER 11B, CBC.
2. PUBLIC WALKS FROM THE BUILDING TO THE PUBLIC WAY AND TO PARKING AREAS DESIGNATED AS ACCESSIBLE SHALL COMPLY WITH CHAPTER 11B, PART 2, TITLE 24, CCR. PROVIDE WALKS A MINIMUM OF 48 INCHES WIDE AND WITH A GRADIENT NOT GREATER THAN 5% (1:20), WITH NO ABRUPT CHANGES GREATER THAN 1/2 INCHES IN THE DIRECTION OF TRAVEL.
3. PROVIDE WALKS WITH LEVEL LANDINGS AT ALL EXTERIOR EXIT DOORS COMPLYING WITH CHAPTERS 10 AND 11B, PART 2, TITLE 24, CCR.
4. SURFACE CROSS SLOPE GRADIENT SHALL NOT EXCEED 2 PERCENT PER FOOT AT WALKS AND PATHS WITHIN THE ACCESSIBLE PATH OF TRAVEL.
5. PROVIDE ACCESSIBLE BUILDING ENTRANCES COMPLYING WITH CHAPTERS 10 AND 11B, PART 2, TITLE 24, CCR., UNLESS SHOWN OTHERWISE.
6. PROVIDE WARNING CURB, RAILING/GUIDE RAIL OR OTHER PROTECTIVE DEVICE AT ALL ABRUPT CHANGES IN LEVEL, (EXCEPT BETWEEN A WALK/SIDEWALK AND ADJACENT STREET OR DRIVEWAY) COMPLYING WITH CHAPTER 10, PART 2, TITLE 24, CCR.
7. DOOR CONSTRUCTION AND HARDWARE: A) PROVIDE THE BOTTOM 10 INCHES OF ALL DOORS (EXCEPT AUTOMATIC AND SLIDING DOORS) WITH A SMOOTH UNINTERRUPTED SURFACE PERMITTING THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. B) LIMIT DOOR OPERATING FORCE IN COMPLIANCE WITH CHAPTER 10, PART 2, TITLE 24, CCR.
8. ACCESSIBLE WATER CLOSET COMPARTMENTS AND FIXTURES: A) PROVIDE ACCESSIBLE WATER CLOSETS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. B) PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 15, PART 5, TITLE 24, CCR. C) EXCEPT FOR DOOR OPENING WIDTHS AND DOOR SWINGS, PROVIDE A MINIMUM 44 INCH WIDE CLEAR AND UNOBSTRUCTED ACCESS PATH TO ACCESSIBLE WATER CLOSET COMPARTMENTS.
9. ACCESSIBLE URINALS: **A)** PROVIDE ACCESSIBLE URINALS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 15, PART 5, TITLE 24, CCR.
10. ACCESSIBLE LAVATORIES: **A)** PROVIDE LAVATORIES COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 16, PART 5, TITLE 24, CCR.
11. ACCESSIBLE SINKS: **A)** PROVIDE SINKS COMPLYING WITH ACCESSIBLE DIMENSION SCHEDULE. **B)** PROVIDE ACCESSIBLE CONTROLS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND CHAPTER 16, PART 5, TITLE 24, CCR. **C)** PROVIDE KNEE CLEARANCE UNDER SINKS MINIMUM 30 INCHES WIDE AND MINIMUM 27 INCHES HIGH, MEASURED FROM FINISH FLOOR TO BOTTOM OF SINK, AND EXTENDING A MINIMUM OF 19 INCHES FROM APRON FRONT EDGE. **D)** PROVIDE SINKS WITH MAXIMUM DEPTH OF 6-1/2 INCHES.
12. GRAB BARS: **A)** PROVIDE GRAB BARS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** SHARP OR ABRASIVE SURFACES ADJACENT TO GRAB BARS ARE NOT PERMITTED. **C)** LOCATE GRAB BARS ON ONE SIDE AND THE BACK OF THE WATER CLOSET, 33 INCHES ABOVE AND PARALLEL TO THE FLOOR. PROVIDE SIDE GRAB BARS AT LEAST 48 INCHES LONG, WITH THE FRONT END POSITIONED 24 INCHES IN FRONT OF THE WATER CLOSET. LOCATE SIDE MOUNTED GRAB BAR MAXIMUM 12 NCHES FROM REAR WALL. **D)** PROVIDE REAR GRAB BARS AT LEAST 36 INCHES LONG, MOUNTED WITH CLOSEST END A MAXIMUM OF 6 INCHES FROM SIDE WALL. **E)** GRAB BARS SHALL NOT ROTATE IN THEIR FITTINGS. **D)** FOR MOUNTING HEIGHTS SEE ACCESSIBLE DIMENSION SCHEDULE
13. ACCESSIBLE TOILET ACCESSORIES: **A)** PROVIDE ACCESSORIES COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR AND ACCESSIBLE DIMENSION SCHEDULE. **B)** WHERE TOWEL, SOAP AND SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED, PROVIDE AT LEAST ONE OF EACH TYPE WITH ALL OPERABLE PARTS, INCLUDING COIN SLOTS, LOCATED MAXIMUM 40 INCHES AFF. **C)** MOUNT MIRRORS WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE MAXIMUM 40 INCHES AFF. **D)** TOILET TISSUE DISPENSER SHALL BE LOCATED ON THE WALL CLOSEST TO WATER CLOSET, 7" MIN AND 9" MAX IN FRONT OF WATER CLOSET, MEASURED TO THE CENTERLINE OF THE DISPENSER.
14. ACCESSIBLE DRINKING FOUNTAINS: PROVIDE DRINKING FOUNTAINS COMPLYING WITH CHAPTER 11B, PART 2, TITLE 24, CCR, CHAPTER 16, PART 5, TITLE 24, AND CCR.
15. ACCESSIBILITY SIGNAGE - CBC 11B-703: **A)** PROVIDE ACCESSIBLE PARKING SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION II, PART 2, TITLE 24, CCR. **B)** PROVIDE TOILET ROOM ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR. **C)** PROVIDE PERMANENT ROOM ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR. **D)** PROVIDE DIRECTIONAL AND INFORMATIONAL ACCESSIBILITY SIGNAGE COMPLYING WITH CHAPTER 11B, DIVISION I, PART 2, TITLE 24, CCR

GENERAL SITE NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH STATE, FEDERAL AND LOCAL CODES, ORDINANCES, LAWS AND THE CALIFORNIA BUILDING CODE, 2019 EDITION, CALIFORNIA FIRE CODE, 2019 EDITION.
2. THE RECOMMENDATIONS OF THE SOILS REPORT FOR THE SITE EARTHWORK. ARE AVAILABLE UPON REQUEST FROM THE SOILS ENGINEER.
3. THE PROJECT MANUAL, INCLUDING SPECIFICATIONS, UNDER SEPARATE COVER, IS AN INTEGRAL PART OF THE CONTRACT DOCUMENTS.
4. VISIT THE SITE, VERIFY ALL DIMENSIONS BEFORE SUBMITTING A BID. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, AND OBTAIN ALL REQUIRED PERMITS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ACCURATE LOCATION OF NEW BUILDING PADS, CURBS, DRIVES AND WALKWAYS, AND FOR MAINTAINING PROPER RELATIONSHIPS TO PROPERTY LINES, PARCEL LINES AND EASEMENTS.
6. PROVIDE LABOR AND MATERIALS NECESSARY TO COMPLETE ALL FINISH GRADING, AS SHOWN IN THE CONTRACT DOCUMENTS INCLUDING CIVIL AND LANDSCAPE DRAWINGS. THIS SHALL INCLUDE FINAL CONTOUR GRADING AND BERMING PER LANDSCAPE ARCHITECT'S PLANS.
7. VERIFY ALL ELEVATIONS, FLOW LINES, EXISTING CONDITIONS, AND POINTS OF CONNECTIONS WITH ADJOINING PROPERTY. DISCREPANCIES ARE TO BE CALLED TO THE ATTENTION OF THE ARCHITECT AND CIVIL ENGINEER BEFORE PROCEEDING WITH ANY WORK.
8. PROVIDE POSITIVE DRAINAGE OF SURFACE WATER AWAY FROM ALL BUILDINGS, SLABS AND GRADED PADS, WITHOUT PONDING OF WATER ADJACENT TO BUILDINGS OR ON PAVEMENTS. DRAINAGE OF PAVED AND LANDSCAPED AREAS TO BE A MINIMUM OF 1%, UNLESS OTHERWISE NOTED. MAXIMUM SLOPE AT PARKING LOT TO BE 5% EXCEPT AT DRIVES.
9. ALL EARTH WORK TO BE PERFORMED UNDER THE OBSERVATION OF THE SOILS ENGINEER IN ACCORDANCE WITH RECOMMENDATIONS OF THE SOILS REPORT TO ASSURE PROPER SITE PREPARATION, SELECTION OF SATISFACTORY FILL MATERIALS IF ANY, AND PLACEMENT AND COMPACTION OF THE FILLS.
10. COORDINATE SITE GRADING, UTILITY WORK, DRIVEWAY AND FINISH WORK WITH EXISTING AND NEW OFF-SITE CONDITIONS.
11. FIRE HYDRANTS TO BE INSTALLED UNDER THIS CONTRACT ARE TO BE LOCATED PER CIVIL DRAWINGS.
12. ON-SITE WATER, FIRE, SANITARY SEWER AND STORM DRAINAGE TO BE PER CIVIL ENGINEER'S DRAWINGS. INSTALL WATER METER VAULTS WHERE SHOWN. CONTRACTOR TO ADJUST VAULTS TO FINISH GRADE.
13. ALL BUILDINGS INDICATED ARE UNDER SEPARATE CONTRACT PROVIDE GRADED PADS & UTILITIES PER CIVIL ENGINEER'S DRAWINGS AND COORDINATE WITH BUILDING CONTRACTORS.
14. SIGN CONTRACTOR SHALL ACQUIRE SEPARATE PERMITS FOR INSTALLATION OF ALL SIGNS AS REQUIRED BY LOCAL PUBLIC AGENCIES.
15. THE PARKING LOT SHALL HAVE PROPERLY POSTED SIGNS THAT STATE THE USE OF THE PARKING AREA IS FOR THE EXCLUSIVE USE OF EMPLOYEES AND CUSTOMERS OF THIS PROJECT. (SEE CALIFORNIA VEHICLE CODE SECTIONS 22507.8, 22511.5, 22511.8)
16. PERSONNEL OPERATING AT THE CONSTRUCTION SITE SHALL HAVE A MEANS OF COMMUNICATING AND REPORTING A FIRE OR MEDICAL EMERGENCY. THIS REQUIREMENT MAY BE MET BY USE OF A CELLULAR TELEPHONE AND BY DIALING 911. CELLULAR TELEPHONE CALLS TO 911 NOW REPORT TO THE CLOSEST PUBLIC SERVICE ANSWERING POINT: FREMONT POLICE DISPATCH FOR THE PROJECT SITE.

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE CODES AND ALL APPLICABLE LOCAL ORDINANCES. WHERE CONTRACT DOCUMENTS EXCEED SUCH REQUIREMENTS, WITHOUT VIOLATING SUCH CODES, REGULATIONS AND ORDINANCES, CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CODES CONFLICT, THE MORE STRINGENT SHALL APPLY.
2. DURING THE CONSTRUCTION PERIOD, IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CONDITIONS AT THE PROJECT SITE, TO MEET THE REQUIREMENTS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND CALIFORNIA OCCUPATIONAL REGULATIONS . THIS PROVISION SHALL COVER THE CONTRACTOR'S EMPLOYEES AND ALL OTHER PERSONS WORKING UPON OR VISITING THE SITE. THE CONTRACTOR SHALL BECOME FULLY INFORMED OF ALL APPLICABLE STANDARDS AND REGULATIONS AND INFORM ALL PERSONS AND REPRESENTATIVES RESPONSIBLE FOR WORK UNDER THIS CONTRACT.
3. CONFIRM ALL NEW AND EXISTING CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY ARCHITECT IMMEDIATELY IN WRITING OF ALL DISCREPANCIES OR CONFLICTS. DO NOT PROCEED WITH WORK IN THE AREA OF DISCREPANCY OR CONFLICT UNTIL DIRECTION IS GIVEN BY ARCHITECT. IF THE CONTRACTOR PROCEEDS WITHOUT DIRECTION FROM ARCHITECT, IT SHALL BE AT CONTRACTORS RISK, AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CORRECTIVE ACTION.
4. REVIEW THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF SYSTEMS SHOWN ON CONSULTING ENGINEERS DOCUMENTS. DISCREPANCIES BETWEEN THE ARCHITECTURAL AND CONSULTING ENGINEER'S DOCUMENTS SHALL BE BROUGHT TO ARCHITECT'S ATTENTION FOR DIRECTION. CONSTRUCTION INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY CONTRACTOR AT NO EXPENSE TO THE OWNER.
5. DO NOT SCALE THE CONSTRUCTION DOCUMENTS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED GRAPHICS. NOTIFY ARCHITECT IMMEDIATELY IN WRITING OF ALL ADDITIONAL REQUIRED DIMENSIONS. DO NOT PROCEED WITH WORK IN THE AREA OF DISCREPANCY OR CONFLICT UNTIL DIRECTION IS GIVEN BY ARCHITECT. IF THE CONTRACTOR PROCEEDS WITHOUT DIRECTION FROM ARCHITECT, IT SHALL BE AT CONTRACTORS RISK, AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CORRECTIVE ACTION.
6. CORRECT ALL WORK INSTALLED IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS BY CONTRACTOR AS DIRECTED BY ARCHITECT AND AT NO ADDITIONAL EXPENSE TO THE OWNER.
7. VISIT JOB SITE PRIOR TO BEGINNING WORK AND VERIFY ALL DIMENSIONS.
8. SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES AND LICENSES REQUIRED FOR PROPER COMPLETION OF THE WORK. REQUEST ALL INSPECTIONS REQUIRED BY LOCAL GOVERNMENTAL AGENCIES AND COORDINATE THE WORK ACCORDINGLY.
9. WHERE WORK OR EQUIPMENT IS INDICATED "N.I.C." (NOT IN CONTRACT) ON THE DRAWINGS, SUCH WORK AND/OR EQUIPMENT SHALL BE PROVIDED BY OTHERS. CONTRACTOR SHALL COORDINATE AND COOPERATE TO EFFECT SUCH INSTALLATION.
10. ALL PLAN DIMENSIONS FOR MASONRY AND CONCRETE REPRESENT FACE OF MATERIAL AND OPENING UNLESS NOTED OTHERWISE.
11. ALL PLAN DIMENSIONS FOR STUD WALLS REPRESENT FACE OF STUD UNLESS NOTED OTHERWISE.
12. ALL PLAN DIMENSIONS SHOWN AT CENTER OF WALL REPRESENT CENTER LINE OF STUD OR STRUCTURAL ELEMENT UNLESS NOTED OTHERWISE.
13. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT THE REVIEW OF ARCHITECT UNLESS NOTED (+/-) OR "VERIFY". DIMENSIONS NOTED "HOLD" SHALL BE CONSIDERED AS ABSOLUTE AND USED FOR LAY-OUT CONTROL UNLESS OTHERWISE DIRECTED BY ARCHITECT.
14. ALL PLAN DIMENSIONS MARKED "CLEAR" OR "CLR" ARE TO FACE OF FINISH, TYPICAL.
15. ALL HEIGHTS ARE DIMENSIONED FROM TOP OF SLAB UNLESS NOTED "AFF" (ABOVE FINISH FLOOR).
16. "TYPICAL" MEANS COMPARABLE CHARACTERISTICS FOR THE ELEVATION OR DETAIL NOTED. WHEN A DETAIL OR NOTE IS IDENTIFIED AS "TYPICAL", CONTRACTOR SHALL APPLY THIS DETAIL OR NOTE TO EVERY LIKE CONDITION, WHETHER OR NOT THE REFERENCE IS REPEATED IN EVERY INSTANCE. VERIFY DIMENSIONS AND ORIENTATION ON PLANS.
17. PROVIDE WORK NOT SPECIFICALLY DETAILED OR SPECIFIED IN ACCORDANCE WITH DETAILS OR SIZES COVERING SIMILAR WORK.
18. "SIMILAR" MEANS COMPARABLE CHARACTERISTICS FOR THE ELEVATION OR DETAIL NOTED VERIFY DIMENSIONS AND ORIENTATION ON PLANS.
19. ABBREVIATIONS THROUGHOUT THE DOCUMENTS COMPLY WITH DOCUMENT ABBREVIATION LIST OR ARE THOSE IN COMMON USE. ARCHITECT WILL DEFINE THE INTENT OF ANY IN QUESTION.
20. REFER TO THE PROJECT MANUAL FOR GENERAL CONDITIONS, SUPPLEMENTARY AND SPECIAL CONDITIONS, AND OTHER REQUIREMENTS.
21. PROVIDE BARRICADES AND PROTECTIVE DEVICES SEPARATING CONSTRUCTION AREAS. PROVIDE TEMPORARY PASSAGES AS REQUIRED. PRIOR TO DELIVERY OF MATERIALS TO CONSTRUCTION ZONE AND REMOVAL OF WASTE FROM SITE, CHECK WITH OWNER FOR ACCEPTABLE ACCESS ROUTE AND TIME. UNDER NO CIRCUMSTANCES USE AREA OUTSIDE THE CONSTRUCTION ZONE WITHOUT PRIOR CLEARANCE FROM THE OWNER. COMPLY WITH REQUIREMENTS AS SPECIFIED IN PROJECT MANUAL.
22. PROVIDE FOR THE PROPER SEQUENCE OF CONSTRUCTION, LOCATION AND SIZE OF OPENINGS. COORDINATE ALL CONSTRUCTION AS INDICATED BY THE CONTRACT DOCUMENTS, INCLUDING SHOP DRAWINGS REVIEWED BY ARCHITECT.
23. REMOVE ALL TRASH AND DEBRIS DAILY. DO NOT STORE BUILDING MATERIALS IN CORRIDORS AT ANY TIME. COMPLY WITH REQUIREMENTS AS SPECIFIED IN PROJECT MANUAL.
24. VERIFY POINTS OF CONNECTION, INCLUDING SIZES AND LOCATIONS, AND ALL OTHER REQUIRED OPERATING CRITERIA WITH EQUIPMENT MANUFACTURER.
25. COORDINATE THE LOCATION AND TYPE OF ALL ACCESS PANELS REQUIRED FOR ACCESSING MECHANICAL, PLUMBING, ELECTRICAL AND OTHER BUILDING SYSTEMS WITH ARCHITECT.
26. CONTRACTOR SHALL STIPULATE THAT ALL PROPOSED SUBSTITUTIONS ARE EQUAL IN PERFORMANCE AND COMPLY WITH APPLICABLE CODES AND ARE EQUAL IN PERFORMANCE AND COMPLY WITH APPLICABLE CODES AND REGULATIONS. CONTRACTOR'S SUBSTITUTION OF ALTERNATE MATERIALS OR SYSTEMS SHALL BE AT NO ADDITIONAL COST TO OWNER.
27. CONTRACTOR SHALL INSURE ALL CONSTRUCTION SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED BY THE INSPECTOR OF RECORD. FOR CONTINUOUS INSPECTION, TESTING, AND OBSERVATION REQUIREMENTS, REFER TO THE TESTING AND OBSERVATION PROGRAM.

SITE ACCESSIBILITY NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS AS SET FORTH IN TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS AND THE A.D.A.
2. WALKS AND RAMPS SHALL BE 48" MINIMUM IN WIDTH.
3. PROVIDE 80" MINIMUM HEADROOM FROM ALL WALKWAY SURFACES TO ANY OBSTRUCTION.
4. ALL BUILDING ENTRANCES SHALL BE MADE ACCESSIBLE TO THE DISABLED.
5. ALL WALKS SHALL HAVE A SLIP RESISTANT CONCRETE OR ASPHALTIC CONCRETE SURFACE NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2". WHERE LEVEL CHANGES DO OCCUR THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4" MAY BE VERTICAL. SLOPE IN DIRECTION OF TRAVEL SHALL NOT EXCEED 1:20 (5%) WITHOUT HANDRAILS, 1:12 (8%) WITH HANDRAILS.
6. WALKS, SIDEWALKS AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHEREVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN GRATINGS SHALL BE LIMITED TO 1/2" IN ONE DIRECTION. ELONGATED OPENINGS SHALL BE PERPENDICULAR TO DOMINANT DIRECTION OF TRAVEL.
7. AT EVERY ENTRANCE AND AT EVERY MAJOR JUNCTION ALONG A PEDESTRIAN ROUTE OF TRAVEL, THERE SHALL BE A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL INDICATE THE DIRECTION TO ACCESSIBLE BUILDING ENTRANCES AND FACILITIES AND SHALL COMPLY WITH REQUIREMENTS FOUND IN SECTION 11B-703.5 OF TITLE 24. SEE DETAIL
8. AT EVERY DRIVEWAY ENTRANCE SHALL HAVE A SIGN THAT DESIGNATED ACCESSIBLE PARKING STALLS ARE FOR THE USE OF PERSONS WITH DISABILITIES AND DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL COMPLY WITH REQUIREMENTS FOUND IN SECTION 11B-502 OF CBC. SEE DETAILS.

MISC FINISH NOTES

1. ALL CEILING HEIGHT DIMENSIONS MEASURED TO FINISH SURFACES UNLESS NOTED OTHERWISE.
2. EXTEND BASE MATERIAL BEHIND ALL MOVABLE EQUIPMENT AND INTO ALL ALCOVES, KNEESPACES AND SIMILAR AREAS, UNLESS NOTED OTHERWISE.
3. WHEN COUNTERTOP SPLASH IS REQUIRED, EXTEND SPLASH ON SIDES WHERE COUNTER JOINS ADJACENT WALL SURFACE UNLESS NOTED OTHERWISE.
4. ALL INTERIOR FINISHES SHALL COMPLY WITH CHAPTERS 8, 16 AND 25, PART 2, TITLE 24, CCR.
5. PROVIDE BACKING PLATES OR BLOCKING BEHIND ALL WALL MOUNTED EQUIPMENT, CASEWORK, AND ACCESSORIES AS REQUIRED FOR POSITIVE ATTACHMENT TO STRUCTURE. SEE INTERIOR DETAILS.
6. SEAL ALL PENETRATIONS OF SOUND RATED PARTITIONS, FLOORS OR CEILING ASSEMBLIES , INCLUDING ELECTRICAL DEVICES, CABINETS AND OTHER ELEMENTS WITH APPROVED RESILIENT SEALANT. SEE SPEC SECTION 07 84 00 FOR STANDARDS AND REGULATORY CRITERIA FOR FIRESTOPPING SYTEMS IN FIRE RATED AND SOUND RATED ASSEMBLIES.
7. ALL GYPSUM WALL BOARD CORNER BEADS TO BE SQUARE NOSE, UNLESS NOTED OTHERWISE.

STRUCTURAL NOTES

1. PROVIDE ALL TEMPORARY SHORING AND BRACING AS REQUIRED FOR ALL DEMOLITION AND NEW WORK AS REQUIRED. ASSUME FULL RESPONSIBILITY FOR REPAIR AND/OR REPLACEMENT OF DAMAGED AREAS, INCLUDING BUT NOT NECESSARILY LIMITED TO, STRUCTURE, FINISHES, EQUIPMENT AND FURNISHINGS IF DAMAGE OF ANY KIND OCCURS AS RESULT OF IMPROPER OR INADEQUATE SHORING OR BRACING.
2. UNLESS SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS, DO NOT CUT OR OTHERWISE MODIFY STRUCTURAL ELEMENTS WITHOUT DIRECTION FROM ARCHITECT. PROVIDE REINFORCEMENT, SUPPORT, TEMPORARY SHORING SATISFACTORY TO THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO CUTTING INTO STRUCTURAL PORTIONS OF ANY BUILDING ELEMENT. PROVIDE ALL CUTTING OF STRUCTURAL ELEMENTS, AND ALL ASSOCIATED REPAIR OR REFINISHING OF ADJACENT SURFACES AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWER DRIVEN PINS IN EXISTING NON-PRE-STRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWER DRIVEN PINS IN EXISTING PRE-STRESSED REINFORCED CONCRETE (POST OR PRE TENSIONED), USE A NON- DESTRUCTIVE METHOD TO LOCATE TENDONS PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
4. PROVIDE TEMPORARY SHORING FOR EXCAVATIONS THAT REMOVE THE LATERAL SUPPORT FROM AN EXISTING BUILDING OR A PUBLIC WAY. PRIOR TO ISSUANCE OF PERMIT, OBTAIN APPROVAL FROM THE ENFORCING AGENCY FOR EXCAVATIONS ADJACENT TO A PUBLIC WAY.
5. OBTAIN NECESSARY PERMITS, INCLUDING CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT FOR ALL TRENCHING.

FIRE WATCH

A FIRE WATCH IS INTENDED AS A TEMPORARY ALTERNATE TO A FIRE PROTECTION/LIFE SAFETY SYSTEM AND ALLOWS A BUILIDNG TO BE TEMPORARILY OCCUPIED WHILE THE FIRST PROTECTION SYSTEM IS OUT OF SERVICE. THE FIRE DEPARTMENT AND FIRE CODE OFFICIAL TO BE NOTIFIED IMMEDIATELY AND THE SCHOOL DISTRICT TO ESTABLISH A FIRE WATCH PER DSA IR F-2.

ABBREVIATIONS

AB.	ANCHOR BOLT
ABV.	ABOVE
ASST.	ASSISTANT
ACOUS.	ACOUSTICAL
AP.	ACOUSTICAL PANEL
A.C.T.	ACOUSTICAL CEILING TILE
A.D.	AREA DRAIN
ADD.	ADDITIONAL
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISHED FLOOR
A.F.	ABOVE FINISH
AGGR.	AGGREGATE
ALT.	ALTERNATE
ALUM.	ALUMINUM
AMT.	AMOUNT
ANOD.	ANODIZED
ARCH.	ARCHITECT/ARCHITECTURAL
BD.	BOARD
BTWN.	BETWEEN
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
B.M.	BENCH MARK
BOT.	BOTTOM
C&G	CURB AND GUTTER
C/C	CENTER TO CENTER
CAB.	CABINET
CBC.	CALIFORNIA BUILDING CODE
CCR.	CALIFORNIA CODE OF REGULATIONS
C.C.W.	COUNTER CLOCKWISE
CER.	CERAMIC
C.T.	CERAMIC TILE
C.I.P.	CAST IN PLACE
C.J.	CONSTRUCTION JOINT
CL	CENTER LINE
CLG.	CEILING
CLG. DIFF.	CEILING DIFFUSER
CLG. HT.	CEILING HEIGHT
CLG. REG.	CEILING REGISTER
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEANOUT
COL	COLUMN
COMBO.	COMBINATION
CONC.	CONCRETE
CONF.	CONFERENCE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS/CONTINUATION
COORD.	COORDINATE
CORR.	CORRIDOR
C.P.	CONCRETE PIPE
CTV	CABLE TELEVISION
C.W.	COLD WATER
DEMO.	DEMOLITION
DEPT.	DEPARTMENT
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIFF.	DIFFERENCE
DIM.	DIMENSION
DIV.	DIVISION
DN.	DOWN
D.S.	DOWNSPOUT
DTL.	DETAIL
DWG.	DRAWING
D/W	DISHWASHER
D.	DRYER
(E)	EXISTING
E.	EAST
E.J.	EXPANSION JOINT
ELEV.	ELEVATION
ELAST.	ELASTOMERIC
ELEC.	ELECTRICAL
EMERG.	EMERGENCY
ENGR.	ENGINEER
EQ.	EQUALLY SPACED
EQUIP.	EQUIPMENT
EST.	ESTIMATE
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR

F.F.	FINISH FLOOR
F/F	FACE TO FACE
F.A.	FIRE ALARM
F.A.C.P.	FIRE ALARM CONTROL PANEL
F.D.	FLOOR DRAIN
F.D.C.	FIRE DEPARTMENT CONNECTION
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.	FIRE HYDRANT
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH
F.F.	FINISH FLOOR
FIN.GR.	FINISH GRADE
FIXT.	FIXTURE
FLR.	FLOOR/FLOORING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.P.	FACE OF PLYWOOD/ SHEATHING
F.O.S.	FACE OF STUD
F.P.M.	FEET PER MINUTE
FRT	FIRE RETARDANT TREATED
FSTNR.	FASTENER
FT.	FOOT
FTG.	FOOTING
FURR.	FURRING
F.R.	FIRE RATED
G.	GAS
GA.	GAUGE
GAL.	GALLON
GALV.	GALVANIZED
GL.	GLASS
GLU-LAM	GLUE LAMINATED
GND.	GROUND
GOV'T.	GOVERNMENT
GYP.	GYPSUM
GYP. BD	GYPSUM BOARD
H.	HIGH
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HDR.	HEADER
HDWR.	HARDWARE
HGR.	HANGER
HT.	HEIGHT
HM.	HOLLOW METAL
HORIZ.	HORIZONTAL
HP.	HORSEPOWER
HR.	HOUR
HVAC	HEATING, VENTILATION, AIR CONDITIONING
H.W.	HOT WATER
ICC	INTERNATIONAL CODE COUNCIL
I.D.	INSIDE DIAMETER
ILLUM.	ILLUMINATION
IN.	INCH
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
ISO.	ISOMETRIC
JAN.	JANITOR
JB.	JUNCTION BOX
JT.	JOINT
L.	LEFT
LAV.	LAVATORY
LB.	POUND
LDR.	LEADER
L.F.	LINEAR FOOT
L.H.	LEFT HAND
LIN.	LINEAR
LOC.	LOCATION
LONG.	LONGITUDINAL
LT.	LIGHT
LT. WT.	LIGHTWEIGHT
LVR	LOUVER

MACH RM.	MACHINE ROOM
MAINT.	MAINTENANCE
MAN.	MANUAL
MAS.	MASONRY
MAT.	MATERIAL
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MED.	MEDIUM
MTL.	METAL
MEZZ.	MEZZANINE
MANUF.	MANUFACTURER
M.H.	MANHOLE
M.O.	MASONRY OPENING
MGR'S	MANAGERS
MPH	MILES PER HOUR
MULL.	MULLION
MULT.	MULTIPLE
N.	NORTH
N/A	NOT APPLICABLE
NAT.	NATURAL
NEG.	NEGATIVE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.R.C.	NOISE REDUCTION COEFFICIENT
N.T.S.	NOT TO SCALE
O/O	OUT TO OUT
OA.	OVERALL
OBSC.	OBSCURE
O.C.	ON CENTER
OD.	OUTSIDE DIAMETER
O.D.	OUTSIDE DIMENSION
O.F.C.I.	OWNER FURNISHED-CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED- OWNER INSTALLED
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPP.	OPPOSITE
O.R.D.	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
OZ.	OUNCE
PAR.	PARALLEL
PERF.	PERFORATED
PERIM.	PERIMETER
PERM.	PERMANENT
PERP.	PERPENDICULAR
PKG.	PACKAGE
PL	PROPERTY LINE
PLAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
PR.	PAIR
PREFAB.	PREFABRICATED
PREFIN.	PREFINISHED
PRELIM.	PRELIMINARY
PREP.	PREPARATION
PROJ.	PROJECT
PROP.	PROPERTY
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.V.C.	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
PWR.	POWER
QTR.	QUARTER
QTY.	QUANTITY
RAD.	RADIUS
RANGE	STOVETOP/ OVEN
RD.	ROAD
RECD.	RECEIVED
RECPT.	RECEPTACLE
RECT.	RECTANGULAR
REF.	REFERENCE
REINF.	REINFORCED/REINFORCING
REM.	REMOVABLE
REQD.	REQUIRED
RESIL.	RESILIENT
RESTRM.	RESTROOM
R.H.	RIGHT HAND
RM.	ROOM
R.O.	ROUGH OPENING
R.O.W.	RIGHT OF WAY
R.W.C.	RAIN WATER CONDUCTOR
R.W.L.	RAIN WATER LEADER

S	SOUTH
SA.	SUPPLY AIR
SALV.	SALVAGE
SAN.	SANITARY
S.B.	SPLASH BLOCK
S.C.	SOLID CORE
SCHED.	SCHEDULE
S.D.	STORM DRAIN
SEC.	SECOND
SECT.	SECTION
SGL.	SINGLE
SHO.	SHOWER
SHT.	SHEET/SHEETING
SHTNG.	SHEATHING
SIM.	SIMILAR
S.M.	SHEET METAL
SP.	SPECIAL
SPEC.	SPECIFICATION, SPECS.
SPKLR.	SPRINKLER
SPKR.	SPEAKER
SQ.	SQUARE
S.S.	STAINLESS STEEL
ST.	STREET
STA.	STATION
STAGG.	STAGGERED
S.T.C.	SOUND TRANSMISSION CLASS
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
S.W.P.P.P.	STORM WATER POLLUTION PREVENTION PLAN
SYM.	SYMBOL
SYS.	SYSTEM
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN.	TANGENT
T.B.	TOP OF BEAM
T.D.	TRENCH DRAIN
TECH.	TECHNICAL
TEL.	TELEPHONE
TEMP.	TEMPERATURE
T.	TEMPERED
THK.	THICKNESS
THRU.	THROUGH
T.O.C.	TOP OF CONCRETE
T.O.G.	TOP OF GYPCRETE
T.O.S.	TOP OF SHEATHING
T.O.P.	TOP OF PARAPET
T.O.PLATE	TOP OF PLATE
TRANS.	TRANSPARENT
TOW.	TOP OF WALL
THRESH.	THRESHOLD
UNFIN.	UNFINISHED
UNIF.	UNIFORM
U.O.N.	UNLESS OTHERWISE NOTED
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VEST.	VESTIBULE
VOL.	VOLUME
W	WASHER
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
W/C	WATER CLOSET
WD.	WOOD
W/D	WASHER/ DRYER STACKED
WHTR.	WATER HEATER HOT H_2O
W.P.	WATERPROOF
W.R.	WATER RESISTANT
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC
YD.	YARD

MASTER KEYNOTE LIST

0-101	(E) PLANTER AND CONCRETE CURB TO REMAIN. PROTECT IN PLACE.
09 24 00.01	PATCH AND REPAIR EXISTING CEMENT PLASTER AT NEW FIRE ALARM PULL BOX AS REQUIRED.
32 12 16.01	SAW CUT AND PATCH (E) ASPHALT PAVEMENT FOR (N) FIRE ALARM CONDUIT DUCT BANK, REFER TO FIRE ALARM SITE PLAN.
32 90 00.01	COORDINATE REMOVAL OF ALL VEGETATION WITH SCHOOL AND RETURN AREA BACK TO PRE-CONSTRUCTION CONDITION. REFER TO FIRE ALARM DRAWINGS FOR ROUTING.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123922 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

DSA

CONSULTANT

STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

GENERAL NOTES / KEYNOTES

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS
1900 E 18TH ST
NATIONAL CITY, CA 91950

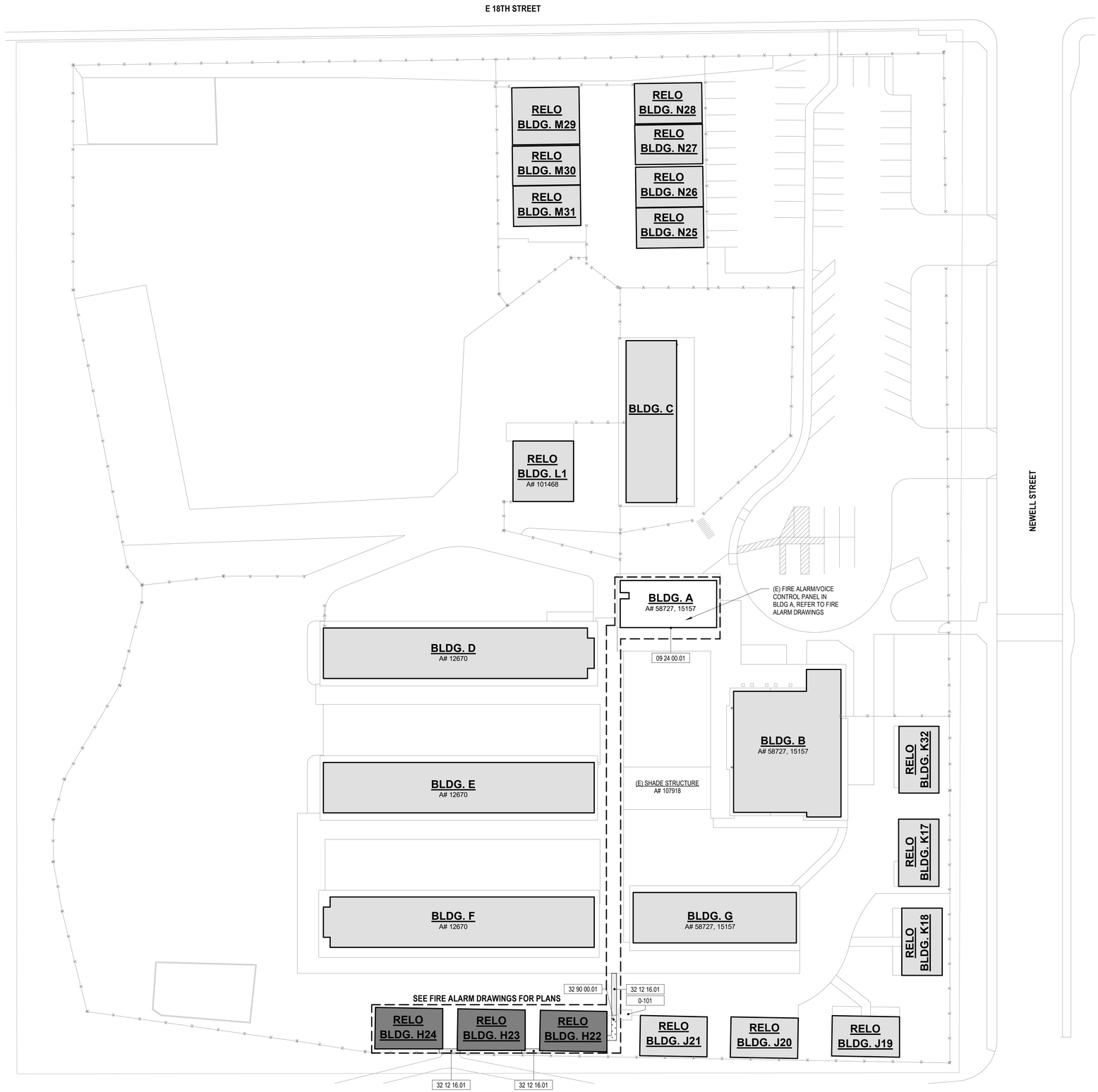
SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
TS-2

12/19/2024 9:03:24 AM Autodesk Docs://Las Palmas ES/Las Palmas ES - Fire Alarm.rvt



SITE PLAN SCALE: 1" = 30'-0" (1)

LEGEND

BLDG A A#	BUILDING IDENTIFICATION DESIGNATION
	BUILDING NOT IN SCOPE
	BUILDINGS IN SCOPE - FIRE ALARM ONLY
	LIMIT OF WORK

GENERAL NOTES

1. REFER TO ELECTRICAL / FIRE ALARM SITE PLAN FOR CONDUIT ROUTING AND SUPPLEMENTAL EQUIPMENT.
2. NO SITEWORK IN SCOPE EXCEPT AS SHOWN FOR ROUTING CONDUIT.
3. ALL EXISTING PARKING TO REMAIN AND IS NOT PART OF SCOPE.
4. SITE IS NOT LOCATED WITHIN A WILDLAND URBAN INTERFACE AREA.
5. COORDINATE WORK IN LANDSCAPE AREAS WITH DISTRICT PRIOR TO PERFORMING.

ACCESSIBILITY NOTES

1. PATH OF TRAVEL (P.O.T.) UPGRADES NOT REQUIRED PER 2022 CBC 11B-202.4 EXCEPTION 7:

   *PROJECTS CONSISTING ONLY OF HEATING, VENTILATION, AIR CONDITIONING, REROOFING, ELECTRICAL WORK NOT INVOLVING PLACEMENT OF SWITCHES AND RECEPTACLES, COSMETIC WORK THAT DOES NOT AFFECT ITEMS REGULATED BY THIS CODE. SUCH AS PAINTING, EQUIPMENT NOT CONSIDERED TO BE A PART OF THE ARCHITECTURE OF THE BUILDING OR AREA, SUCH AS COMPUTER TERMINALS AND OFFICE EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH SECTION 11B-202.4 UNLESS THEY AFFECT THE USABILITY OF THE BUILDING OR FACILITY.

KEYNOTES

0-101	(E) PLANTER AND CONCRETE CURB TO REMAIN. PROTECT IN PLACE.
09 24 00.01	PATCH AND REPAIR EXISTING CEMENT PLASTER AT NEW FIRE ALARM PULL BOX AS REQUIRED.
32 12 16.01	SAW CUT AND PATCH (E) ASPHALT PAVEMENT FOR (N) FIRE ALARM CONDUIT DUCT BANK, REFER TO FIRE ALARM SITE PLAN.
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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123922 INC:
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024

DSA

CONSULTANT

STAMP

LICENSED ARCHITECT
ANDREW PITTS
No. C-20589
REN JUL 31, 25
STATE OF CALIFORNIA

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

SITE PLAN

LAS PALMAS ELEMENTARY SCHOOL

FIRE ALARM REPAIRS
1900 E 18TH ST
NATIONAL CITY, CA 91950

SUBMITTALS / REVISIONS

#	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.

A-101

12/19/2024 9:03:25 AM Autodesk Docs://Las Palmas ES/Las Palmas ES - Fire Alarm.rvt

SYMBOLS & LEGENDS

ANNOTATION

SD F J X X X — SOLID SYMBOL WITH "X" INDICATES CONDUIT, DEVICE, OR EQUIPMENT EXISTING TO REMAIN IN PLACE.

SD F J — DASHED SYMBOL INDICATES CONDUIT, DEVICE, OR EQUIPMENT TO BE REMOVED.

SD F J — SOLID SYMBOL INDICATES NEW PROPOSED CONDUIT, DEVICE, OR EQUIPMENT.

F J — SURFACE MOUNT BOX FOR ITEM SHOWN.

F J — RECESSED MOUNT BOX FOR ITEM SHOWN.

A — CONDUIT CABLE TAG.

1 — SHEET SPECIFIC REFERENCE.

1 / FA101 — DETAIL CALLOUT REFERENCE:
UPPER SECTION INDICATES DETAIL NUMBER DESIGNATOR
LOWER SECTION INDICATES SHEET REFERENCED TO

1 / FA101 — SECTION CALLOUT REFERENCE:
UPPER SECTION INDICATES REFERENCE DESIGNATOR
LOWER SECTION INDICATES SHEET REFERENCED TO

46" — MOUNTING HEIGHT ABOVE FINISHED FLOOR OR GRADE TO CENTER OF DEVICE.

EQUIPMENT AND DEVICES

- CONDUIT CONCEALED IN WALL OR CEILING.
- CONDUIT CONCEALED UNDERGROUND.
- CONDUIT RUN EXPOSED.
- G — GROUNDING CONDUCTOR.
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.
- CONDUIT CHANGE IN HORIZONTAL ELEVATION.
- CONDUIT TERMINATED AND CAPPED.
- CONDUIT CONTINUATION.
- DEMOLISH CONDUIT OR DUCTBANK BELOW FLOOR OR GRADE. PATCH SURFACES TO MATCH EXISTING.
- J — JUNCTION BOX WALL.
- PULL BOX.
- HA-1,3 — HOMERUN TO PANELBOARD WITH PANEL AND CIRCUIT INDICATION.
- SURFACE RECESSED — PANELBOARD.
- SURFACE RECESSED — TERMINAL CABINET.

FIRE ALARM DEVICE LEGEND

NOTES: DEVICE CATALOG NUMBERS INDICATED ARE FOR GAMEWELL/FCI UNLESS OTHERWISE NOTED.

SYMBOL	DESCRIPTION	MOUNTING/BACKBOX/RING
	EXISTING FIRE ALARM/VOICE CONTROL PANEL MANUFACTURER: FCI MODEL: E3	
	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY – SNAC MANUFACTURER: GAMEWELL FCI MODEL: GFPS CSFM #: 7300–1703:0167	SPECIAL BACKBOX SUPPLIED BY STANDARD ELECTRONICS MTD. AT 72" TO TOP (TYPICAL) 15"H X 14.25"W X 2.75"D
SD	ADDRESSABLE SMOKE DETECTOR CEILING MOUNTED MANUFACTURER: SYSTEM SENSOR MODEL: 2351B/B501 BASE/TR300 TRIM RING CSFM #: 7220–1653:0508	4 SQUARE DEEP BOX WITH 3–0 RING MOUNT 3' AWAY FROM ANY AIR MOVEMENT SYSTEMS
A H	190° ATTIC HEAT DETECTOR MANUFACTURER: SYSTEM SENSOR MODEL: 5604/5601P BASE CSFM #: 7270–1653:0167	4 SQUARE DEEP BOX WITH 3–0 RING
	HORN/STROBE CEILING MOUNTED MANUFACTURER: NOTIFIER MODEL: PC2WL–E WHITE CSFM #: 7125–1653:0503	4 SQUARE DEEP BOX WITH EXTENSION
(WP) F	HORN WEATHER RESISTANT MANUFACTURER: COOPER WHEELOOK MODEL: NH 12/24 R CSFM #: 7125–0785:142	FLUSH MOUNT: 4 SQUARE DEEP BOX WITH EXTENSION SURFACE MOUNT: WBB–R WEATHER PROOF BACKBOX

75CD – REPRESENTS CANDELA INTENSITY
CX – REPRESENTS NAC CIRCUIT NUMBER
SX – REPRESENTS SPEAKER CIRCUIT NUMBER

SD — L1 – REPRESENTS SLC NUMBER

SEQUENCE OF OPERATIONS MATRIX

ACTION	DEVICES	
	SMOKE/HEAT DETECOTORS	AC POWER FAILURE
SOUND ALARM AT FACP	YES	YES
ACTIVATE RELAY FOR OFF–SITE MONITORING	YES	YES
SOUND TROUBLE BUZZER AT FACP	ON WIRING FAULT	YES
ANNUNCIATE AT FACP	YES	YES
ACTIVE HORNS AND VISUALS	YES	NO

SCOPE OF WORK

1. THIS IS A MODIFICATION TO AN EXISTING FULLY AUTOMATIC FIRE ALARM SYSTEM.
2. FURNISH AND INSTALL A COMPLETE 24 VDC, CLOSED CIRCUIT, MICROPROCESSOR BASED, ELECTRICALLY SUPERVISED, ANNUNCIATED FIRE ALARM SYSTEM AS SPECIFIED HERE ON THESE PLANS. THE SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO ALL CONTROL PANELS, POWER SUPPLIES, SIGNAL INITIATING DEVICES, AUDIBLE AND VISUAL ALARM DEVICES, WIRE, AND ACCESSORIES REQUIRED TO PROVIDE A COMPLETE OPERATING SYSTEM. THE SYSTEM SHALL BE WIRED AS A (CLASS A) SYSTEM FOR ALL CIRCUITS.

ABBREVIATIONS

*NOTE: NOT ALL ABBREVIATIONS LISTED ARE USED ON DRAWINGS.

SYMBOLS	DESCRIPTION
#	NUMBER
A	
A	ATTIC
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
B	
BATT	BATTERY
C	
C	CONDUIT [WITH WIRE]
CBC	CALIFORNIA BUILDING CODE,
CEC	CALIFORNIA ELECTRICAL CODE
CLR	CLEAR/CLEARANCE
CO	CONDUIT ONLY WITH NYLON PULLCORD
CSFM	CALIFORNIA STATE FIRE MARSHALL
D	
DSA	DIVSION OF THE STATE ARCHITECT
E	
EA	EACH
EOL	END OF LINE
EQUIP	EQUIPMENT
EX	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	
FFA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FD	FIRE DAMPER
G	
G	GROUND [SYSTEM COMPONENT]
GND	GROUND [SYSTEM COMPONENT]
H	
H	HEAT DETECTOR
HH	HANDHOLE
J	
JB	JUNCTION BOX
JBOX	JUNCTION BOX
M	
MAX	MAXIMUM
MH	MOUNTING HEIGHT
MIN	MINIMUM
MTG	MOUNTING
N	
NAC	NOTIFICATION APPLIANCE CIRCUIT
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
P	
PB	PULLBOX
PH	PHASE
Q	
QTY	QUANTITY
R	
R	RELOCATED EQUIPMENT
RGS	RIGID GALVANIZED STEEL CONDUIT
S	
SD	SMOKE DETECTOR
SQ	SQUARE
T	
TYP	TYPICAL
U	
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
W	
WP	WEATHERPROOF
X	
X	EXISTING

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-123922 INC: A
REVIEWED FOR
SS ☐ FLS ☑ ACS ☐
DATE: 12/26/2024
DSA

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications
CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER M. HOYSAL
No. 24191
Exp. 6/30/25
ELECTRICAL
STATE OF CALIFORNIA
Dec 18, 2024 24191001
STAMP

PREPARED FOR THE
BOARD OF EDUCATION
NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

GENERAL FIRE ALARM SHEET

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

SUBMITTALS / REVISIONS

ISSUE	DATE
50% CONSTRUCTION DOCUMENTS	07/12/2024
DSA SUBMITTAL V1	10/09/2024
DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
FA001

FILE: 24191001.00 layer: fa001 general fire alarm sheet.dwg LAYOUT: LPES - FA001 DATE: 12/18/2024 1:43 PM

FILE: 24191001.02 base fa001 general fire alarm sheet.dwg LAYOUT: LPES - FA002 DATE: 12/18/2024 1:43 PM

GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHOWN ON THESE DRAWINGS SHALL BE USED FOR CONSTRUCTION.

   APPLICABLE CODE FOR FIRE ALARM:
   2022 CALIFORNIA BUILDING CODE, TITLE 24 PART 2
   2022 NFPA 72 WITH CSFM AMENDMENTS
   2022 CALIFORNIA FIRE CODE, TITLE 24 PART 9

2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.

3. UPON COMPLETION OF THE SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.

4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.

5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.

6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND / OR TESTING.

7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.

8. WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THAN 6" TO A HORIZONTAL STRUCTURE.

9. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS, 5 DBA MUST BE MAINTAINED.

10. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.

11. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.

12. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.

13. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.

14. ALL FIRE ALARM WIRING SHALL BE FPL OR FPLP (FIRE POWER LIMITED OR FIRE POSER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.

15. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTION DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.

16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.

17. SMOKE DETECTORS SHALL NOT BE CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.

18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.

19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.

20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.

21. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.

22. CONTROL PANELS, REMOTE ANNUNCIATOR SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48".

23. THE INSTALL CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.

24. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.

25. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

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CONSULTANT

RIZZA ENGINEERING, INC.
EMPOWERING THE BUILT ENVIRONMENT
Power | Lighting | Telecommunications

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REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER A. RIZZA
No. 24737
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STATE OF CALIFORNIA

Dec 18, 2024 24191001

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NATIONAL SCHOOL DISTRICT
NATIONAL CITY, CALIFORNIA

PREPARED BY
SGPA ARCHITECTURE AND PLANNING

FIRE ALARM NOTES

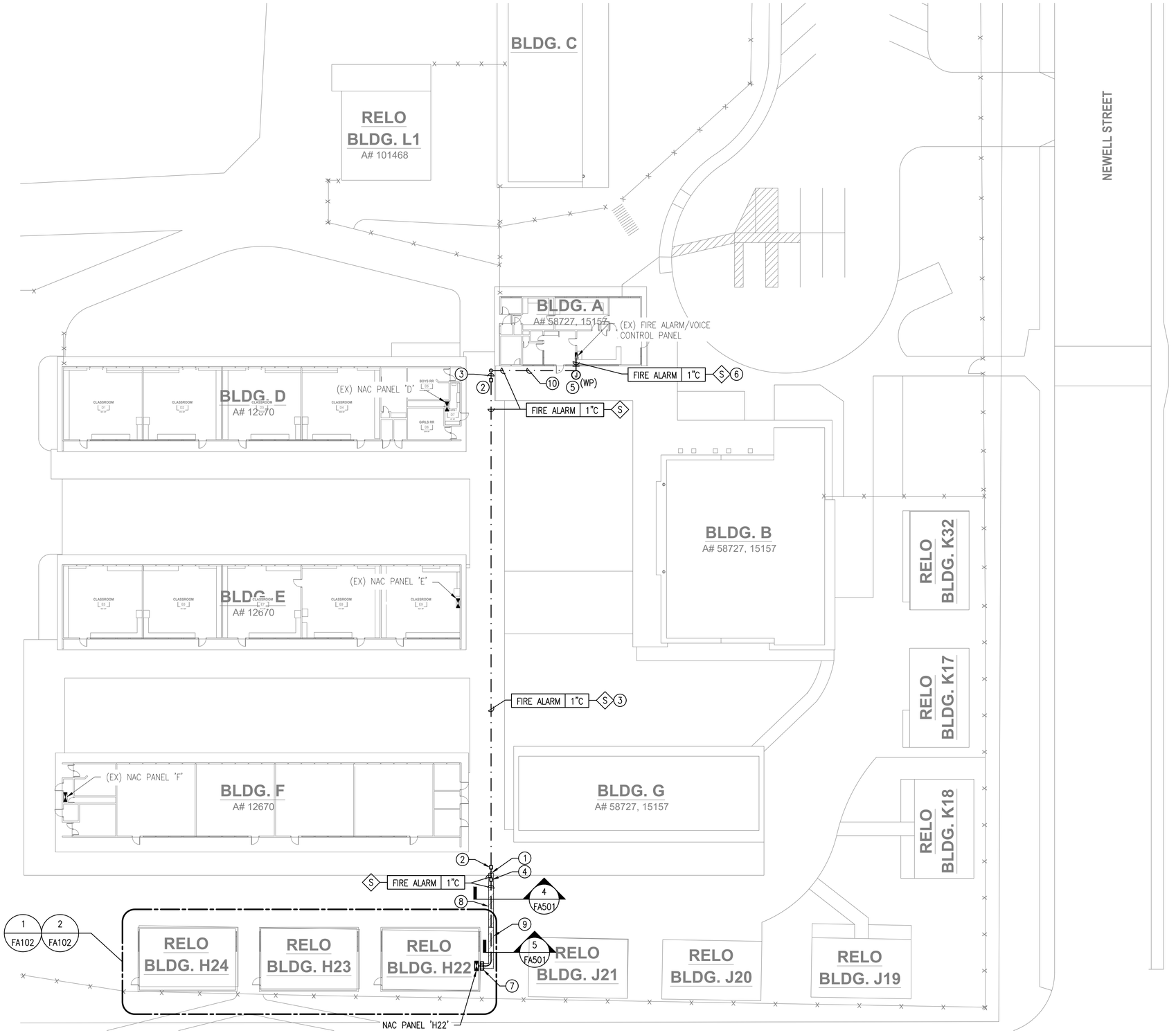
LAS PALMAS
ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

SUBMITTALS / REVISIONS

△	ISSUE	DATE
	50% CONSTRUCTION DOCUMENTS	07/12/2024
	DSA SUBMITTAL V1	10/09/2024
	DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
FA002



1 FA101 **SITE FIRE ALARM PLAN**
SCALE: 1" = 20' – 0"

0' 5' 10' 20' 40'
1" = 20'
N

GENERAL NOTES

1. VERIFY EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND HAND DIG IF NECESSARY.
2. EXPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDE AND SECURE CONDUIT TO CANOPY POST AT 4'–0" ON CENTER.
2. PROVIDE 6" SQUARE X 4" DEEP NEMA 3R PULL BOX AND SECURED ABOVE COVERED WALKWAY.
3. PROVIDE AND SUPPORT CONDUIT ABOVE COVERED WALKWAY AT 8'–0" ON CENTER.
4. PROVIDE 17" X 13" PRECAST CONCRETE UTILITY BOX WITH FIBERGLASS COVER WITH LABEL TO READ "FIRE ALARM".
5. PROVIDE WEATHERPROOF JUNCTION BOX SURFACE MOUNTED ON EXTERIOR WALL ABOVE INTERIOR CEILING HEIGHT.
6. PROVIDE CONDUIT ABOVE EXISTING CEILING. CUT AND PATCH WALLS AND CEILINGS AS REQUIRED BY ARCHITECTS, AS NECESSARY TO INSTALL CONDUITS.
7. PROVIDE 6" SQUARE 6" DEEP NEMA 3R PULL BOX AND SECURE TO EXTERIOR WALL ABOVE INTERIOR CEILING HEIGHT.
8. SAW CUT AND PATCH EXISTING ASPHALT PAVING FOR FIRE ALARM DUCT BANK.
9. PROVIDE DUCT BANK INDICATED THROUGH EXISTING LANDSCAPED AREA. COORDINATE REMOVAL OF ALL VEGETATION WITH SCHOOL AND RETURN AREA BACK TO PER–CONSTRUCTION CONDITION.
10. PROVIDE AND SECURE CONDUIT TO BOTTOM OF COVERED WALKWAY AT 8'–0" ON CENTER.

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NATIONAL CITY, CALIFORNIA

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SITE FIRE ALARM PLAN

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

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ISSUE	DATE
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DSA SUBMITTAL V1	10/09/2024
DSA BACKCHECK V2	12/18/2024

PROJECT NO. 22341-E-02

SHEET NO.
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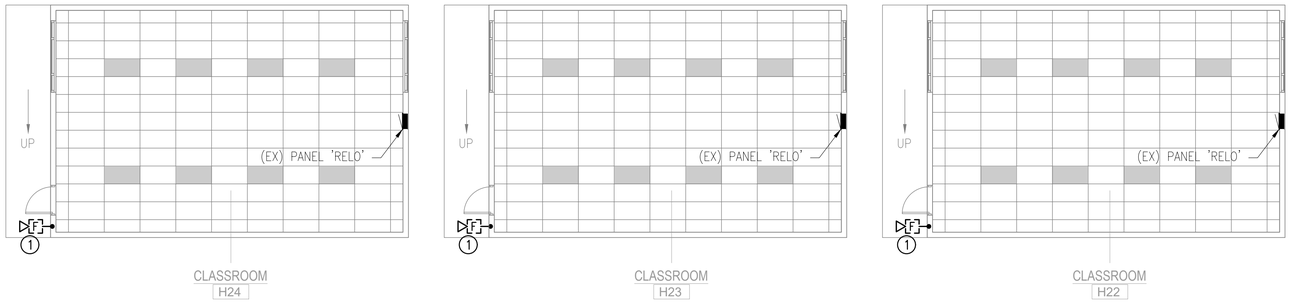


1 FA102 **DEMOLITION FIRE ALARM PLAN**

SCALE: 1/8" = 1' – 0"

0' 2' 4' 8' 16'

1/8" = 1'–0"

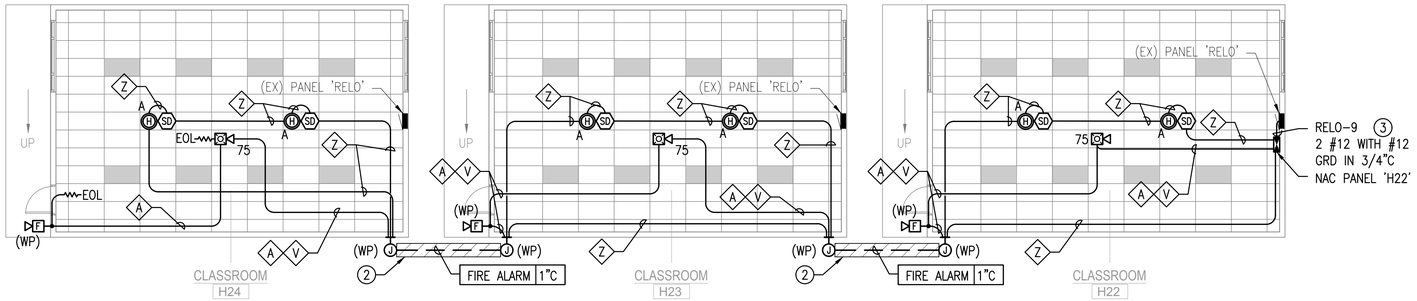
N

GENERAL NOTES

1. WHERE A DEVICE OR ITEM OF FIRE ALARM EQUIPMENT IS SHOWN TO BE REMOVED, REMOVE THE ENTIRE INSTALLATION INCLUDING DEVICE COVER PLATE AND WIRE UNLESS OTHERWISE INDICATED.
2. WHERE THE STRUCTURE, FINISH, CIRCUIT OR EQUIPMENT IS DAMAGED OR LEFT IN INCOMPLETE OR UNWORKABLE DUE TO THE DEMOLITION WORK, IT SHALL BE PATCHED, REPAIRED, REROUTED, REPLACED OR RELOCATED AS CONDITIONS REQUIRE.
3. VERIFY EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND HAND DIG IF NECESSARY.

SHEET NOTES

1. DEMOLISH AND REMOVE FIRE ALARM DEVICE AND WIRING BACK TO ORIGIN. EXISTING BACK BOX AND CONDUIT MAY REMAIN AND BE REUSED FOR NEW DEVICE.
2. SAW CUT AND PATCH EXISTING ASPHALT PAVING FOR FIRE ALARM DUCT BANK.
3. PROVIDE 120 VOLT, 1PH, 20AMP CONNECTION FROM EXISTING PANEL 'RELO'.



2 FA102 **NEW FIRE ALARM PLAN**

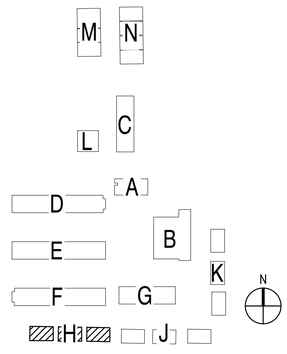
SCALE: 1/8" = 1' – 0"

0' 2' 4' 8' 16'

1/8" = 1'–0"

N

KEY MAP



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FIRE ALARM PLANS

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

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DSA SUBMITTAL V1	10/09/2024
DSA BACKCHECK V2	12/18/2024

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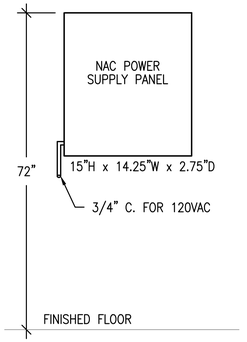
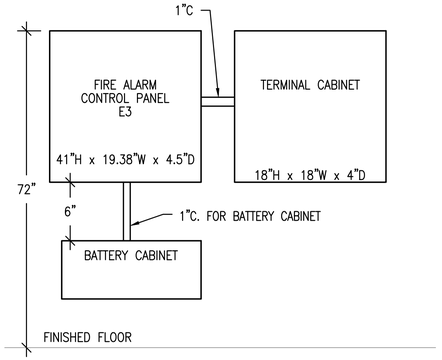


NOTE:
1" MINIMUM DISTANCE BETWEEN PANELS

3 FA501 NAC PANEL H22 ELEVATION DETAIL

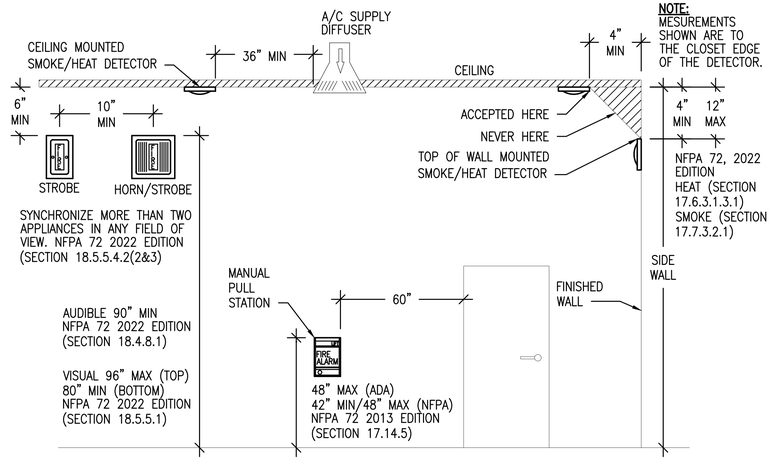
SCALE: NONE



NOTE:
1" MINIMUM DISTANCE BETWEEN PANELS

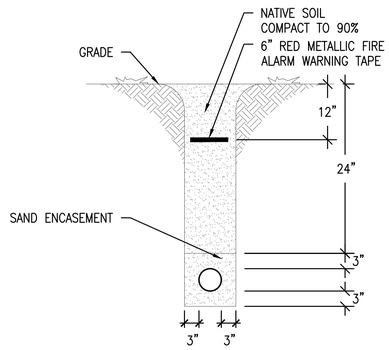
2 FA501 EXISTING FACP ELEVATION DETAIL

SCALE: NONE



1 FA501 TYPICAL FIRE ALARM DEVICE ELEVATIONS

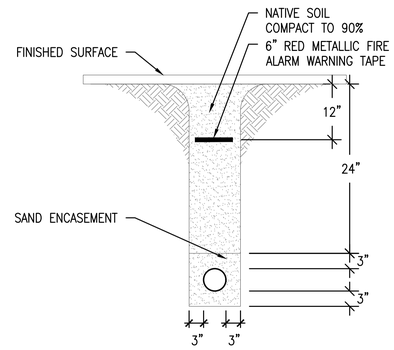
SCALE: NONE



NOTE:
REFER TO PLAN(S) FOR SIZE AND QUANTITY OF CONDUITS.

5 FA501 TYPICAL 'GRADE' DUCT BANK DETAIL

SCALE: NONE



NOTE:
REFER TO PLAN(S) FOR SIZE AND QUANTITY OF CONDUITS.

4 E50# TYPICAL 'FINISHED SURFACE' DUCT BANK DETAIL

SCALE: NONE

SHEET NOTES

1. PROVIDE NEW BREAKER SIZED AS INDICATED IN EXISTING SPACE. NEW BREAKER SHALL MATCH EXISTING MANUFACTURE TYPE, AIC RATING, AND HAVE RED HANDLE WITH BREAKER LOCK-ON DEVICE.

EXISTING

PANEL: RELO VOLTAGE: 240 /120V, 1-PH, 3W AIC: MAIN: 125A/2P M.C.B.
LOCATION: RELO MOUNTING: RECESSED BUS: 125

ITEM	CODE	BKR	CKT	A	B	CKT	BKR	CODE	ITEM
EXISTING LOAD		20/1	1			2	60/		EXISTING LOAD
EXISTING LOAD		20/1	3			4	/2		SAME AS CIRCUIT ABOVE
EXISTING LOAD		20/1	5			6	20/1		SPARE
EXISITNG LOAD		20/1	7			8	20/1		SPARE
1 **FIRE ALARM RELO NAC PANEL**	**N**	**20/1**	9			10	20/1		SPARE
SPARE		20/1	11			12	20/1		SPARE

CIRCUIT CODES: Blank or ***N****: NON-CONTINUOUS* ***K****: KITCHEN* ***L****: LONG-CONTINUOUS* ***M****: MOTOR* ***P****: PANEL* ***R****: DEMANDABLE RECEPT'S* ***U****: UNIT*

CONNECTED VA PER PHASE		0	0	DEMAND KVA:	0.0
CONN. VA (CODE N):	0	TOTAL CONN. VA	0	DEMAND AMPS:	0.0
CONN. VA (CODE L):	0	CONN. VA (CODE K):	0	CONN. AMPS:	0.0
CONN. VA (CODE R):	0	CONN. VA (CODE M):	0	HIGH PH. AMPS/LCL:	0.0

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FIRE ALARM DETAILS

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

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PROJECT NO. 22341-E-02

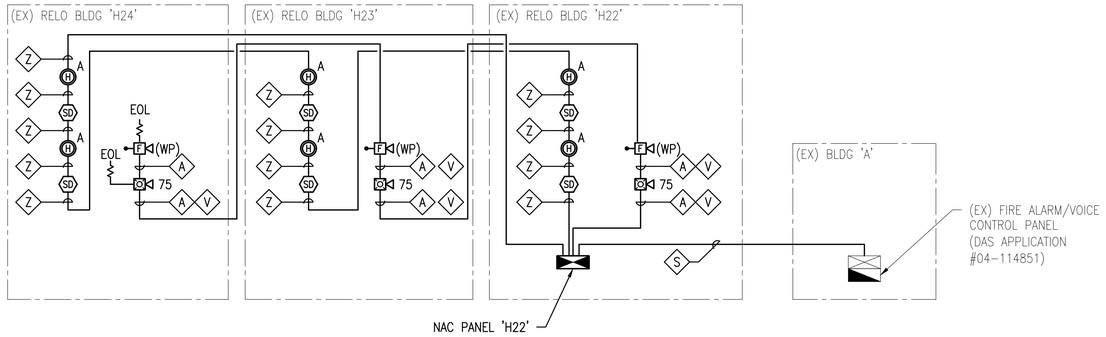
SHEET NO.
FA501

FILE: 24191001.01-02.pwt-fa501 fa501 fire alarm details.dwg LAYOUT: 1-PES - FA501 DATE: 12/18/2024 1:43 PM

File: 24191001.02_base_fa601_fire_alarm_riser_diagram_system.dwg LAYOUT: LPES – FA601 DATE: 12/18/2024 1:43 PM

FIRE ALARM CABLE SCHEDULE

DES.	DESCRIPTION
A	AUDIO CIRCUIT, (2) #12 THHN
V	VISUAL CIRCUIT, (2) #12 THHN
Z	ADDRESSIBLE LOOP, (1) TWISTED PAIR #16
S	SYNCHRONIZATION LOOP, (2) #12 THHN



1 FA601 PARTIAL FIRE ALARM RISER DIAGRAM SYSTEM

SCALE: NONE

FIRE ALARM SYSTEM VOLTAGE DROP AND BATTERY CALCULATIONS

Project Name: **Fire Alarm Repairs Las Palmas ES** Date: 10/3/2024
Project Location: **National City, CA**
Project Number: **P:\24191001**
Designer: **REI**

VOLTAGE DROP REFERENCE DATA

% VOLTS DROP = (2 x L x I x R / 24) x 100
where L = one-way circuit length (ft)
I = current (amps)
R = conductor resistance (ohms/ft)
R = K/CM (K=10.8, CM = circ mils)

WIRE RESISTANCE

AWG	CM	OHMS/1000ft
#10	10380	1.04
#12	6530	1.65
#14	4110	2.63

DEVICE CURRENTS

DEVICE	TAG	AMPS	MIN V	QUANT
horns:	horn	0.024	24V	3
strobes:	15 str	0.047	24V	0
	30 str	0.081	24V	0
	75 str	0.128	24V	0
	110 str	0.166	24V	0
combination	15 hs	0.072	24V	0
horns and	30 hs	0.094	24V	0
strobes:	75 hs	0.153	24V	3
	110 hs	0.183	24V	0
misc.	DSM	0.038	24V	0
detector: photoelec.	Ph	0.004	24V	6
heat	He	0.003	24V	6
duct	Du	0.003	24V	0

NOTE: DEVICE QUANTITIES AND CIRCUIT LENGTHS SHOWN FOR DSA PLANCHECK PURPOSES ONLY; VERIFY WITH SITE PLANS, FLOOR PLANS AND FIELD CONDITIONS.

LOOP	SNAC Panel	Horns	Strobe 15 str	30 str	75 str	110 str	Combination 15 hs	30 hs	75 hs	110 hs	Misc DSM	Detectors Ph	He	Du	Total Amps	Wire AWG	Ckt. Length	Volts Loss	% Volt Loss
FACP (MAIN BUILDING):	1																		
INTIATION CIRCUIT												6	6	0	0.042	#14	350	**0.077**	**0.32%**
CIRCUIT #1		3	0	0	0	0	0	0	3	0	0				0.531	#12	250	**0.439**	**1.83%**
CIRCUIT #2		0	0	0	0	0	0	0	0	0	0				0.000	#12		**0.000**	**0.00%**
CIRCUIT #3															0.000	#12		**0.000**	**0.00%**
CIRCUIT #4															0.000	#12		**0.000**	**0.00%**
SUB-TOTAL	1	3	0	0	0	0	0	0	3	0	0	6	6	0	0.573				

STANDBY BATTERY CALCULATIONS

	FACP
TOTAL STANDBY CURRENT (mA)	150
STANDBY CURRENT x 24 HOURS (A-H)	3.600
NOTIFICATION APPLIANCES ALARM CURRENT (mA)	1573
PANEL ALARM CURRENT (mA)	175
TOTAL ALARM CURRENT x 5 MINUTES (A-H)	0.145
SUBTOTAL AMP-HOURS	3.745
20% BATTERY DERATING FACTOR (A-H)	+0.749
TOTAL REQUIRED AMP-HOURS	**4.494**
PROVIDE	**6.0 AH**

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FIRE ALARM RISER DIAGRAM SYSTEM

LAS PALMAS ELEMENTARY SCHOOL
FIRE ALARM REPAIRS

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SHEET NO.
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