CITY OF SANTA ANA

PUBLIC WORKS AGENCY
20 Civic Center Plaza • P.O. Box 1988
Santa Ana, California 92702
www.santa-ana.org

August 14, 2024

ADDENDUM NO. TWO

SUBJECT: PROJECT NO. 22-1415 MEMORIAL PARK AQUATICS CENTER

The following changes/clarifications have been made to the **SPECIFICATIONS and PLANS** of the subject project:

SPECIFICATIONS:

Specifications Page/ Section	Action	Updates
Page ii: Appendix	Replace sheet ii with revised page ii.	Sheet ii Index has been revised to include Appendix O.
Page iii: Notice Inviting Bids	Replace page vi with revised page vi.	Bid due date extended Q&A Deadline extended Addenda numbers modified Pre-Bid Job Walk non-mandatory
Page xi: Instructions to Bidders	Replace page xi with revised page xi.	Revisions to "References/Additional References" section.
Pages P-10 and P-11	Replace pages P-10 and P-11 with revised pages P-10 and P-11	References & Additional References descriptions updated
Page 4	Replace page 4 with new page 4	Update to Section 2-1, Work to Be Done.
Pages 14 to 17	Replace pages 14 to 17. Refer to revised pages, which now include pages 14 to 18	Updates to Section 5-4 Insurance, thus adding to total number of pages.
Appendix H, Project Manual Cover Sheet	Replace cover sheet with revised cover sheet	Updated title
Appendix H, Project Manual Subsection 00 01 10	Table of Contents	Division 1 updated; Appendices changed to "Exhibits"
Appendix H, Project Manual Division 01	Insert Division 1 specifications	Added Division 1 specifications
Appendix H, Project Manual Subsection Appendix A thru G	Title Pages	Changed from "Appendix" to "Exhibit"
Appendix H, Project Manual Subsection Appendix A	Header and Footer	Changed from "Appendix to "Exhibit"

Appendix H, Project Manual Subsection Appendix B	P-1, P-2, P-3	Changed from "Appendix" to "Exhibit" Location column revised
Appendix J: Hazardous Materials Report	Insert Hazardous Materials Report	Added Hazardous Materials Report
Appendix M	Insert SCE Final Plan	Added SCE Final Plan
Appendix O	Non-Mandatory Pre-Bid Job Walk details	Added sign-in sheet, agenda and photos from job walk

PLANS:

Sheet Number	Action	Updates
A101	Replace sheet A101 with new sheet A101	Changes to Ground Improvement Diagram

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME.

FOR THE CITY OF SANTA ANA

Mike Ortiz, P.E
Deputy Public Works Director
Public Works Agency

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SECTION / ITEM **PAGE**

APPENDIX

CITY OF SANTA ANA
INSTRUCTIONS TO BIDDERS
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that the City of Santa Ana will receive Bids **electronically via PlanetBids** on or before 2:00 pm, August 28, 2024. No late bids will be accepted. No other method of bid submittal will be accepted for:

PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

All Plans and Specifications are available on PlanetBids.

For further information on how to register as a vendor refer to:

https://www.santa-ana.org/vendor-registration/

Do not call Purchasing Division regarding Public Works Agency projects.

Scope of Work: The City of Santa Ana is redeveloping The Memorial Park Aquatics Center. Originally dedicated in May 1950, Memorial Park is a 16.3-acre city park, located in the central-south area of the City of Santa Ana. This project shall include complete demolition and rebuilding the aquatics center, including the existing bathhouse building, pool, pool equipment building & adjacent site work. The new aquatics center will include a new aquatic building, two swimming pools (recreational & competition) & pool deck with seating areas. Additional improvements will include but are not limited to, exterior lighting, cameras, lighting fixtures, landscape, irrigation, site furnishings, entrance walkways, meeting rooms, and flooring.

Schedule: Bidders shall be advised of and adhere to the schedule milestones as follows:

Notice Inviting Bids:	issued July 31, 2024
Non-Mandatory Pre-bid Site Meeting:	August 7, 2024 (see "Pre-Bid Job Meeting" section below)
Addendum #1:	issued August 5, 2024
Addendum #2:	will be issued August 14, 2024
Q&A deadline:	August 19, 2024
Addendum #3:	will be issued August 21, 2024
Bids Due:	August 28, 2024 (see "Notice Inviting Bids", above)
Construction Contract Award:	October 15, 2024
Pre-construction Meeting:	October 16, 2024
Notice to Proceed:	To be determined following Pre-Construction meeting

Project Funding and Deadline: This project is being funded by the American Rescue Plan Act (ARPA). Contractor shall comply with the requirements as outlined in the Construction Contract agreement, attached as Appendix B at all times.

Pre-Bid Job Meeting: There will be a non-mandatory Pre-Bid Job Meeting at 2102 S Flower St, Santa Ana, CA 92707, meeting location will be on the easternmost parking lot on Wednesday, August 7, 2024 at 10:30 a.m.

CITY OF SANTA ANA
INSTRUCTIONS TO BIDDERS
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

TIME FOR COMPLETION OF IMPROVEMENTS AND LIQUIDATED DAMAGES
The time for completion of this project, and the liquidated damages amount when/if the time for completion is exceeded, is included in the Bid Proposal Section of these Contract Documents.

BIDDERS STATEMENT
In accordance with Section 7028.15(e) of the Business and Professions Code, a licensed contractor shall not submit a bid to the public agency unless his or her contractor's license number appears clearly on the bid, the license expiration date is stated, and the bid contains a statement that representations made therein are made under penalty of perjury. Any bid not containing this information or a bid containing information, which is subsequently false, shall be considered non-responsive and shall be rejected by the public agency. Format for these statements are included in the Bid Proposal section of these Contract Documents.

In accordance with the Section 3300 of the California Public Contract Code, the Agency has determined that the BIDDER shall possess a license in the classification specified in the Notice Inviting Bids.

OWNERSHIP AFFIDAVIT
An Ownership Affidavit is required to be completed and submitted with the Bid Proposal. A form is provided in the Bid Proposal section of these Contract Documents.

PROPOSAL GUARANTY
Each bid shall be accompanied by a Proposal Guaranty as instructed in the Notice Inviting Bids AND PlanetBids. A sample Bid Bond is included in the Bid Proposal Section of these Contract Documents.

LIST OF SUB-CONTRACTORS
The State of California Public Contract Code requires listing of all subcontractors who intend to perform work which is ½ % of the bid or $10,000 (streets, highways and bridge projects), whichever is greater, or ½ % of the bid (buildings, parks, or other projects). A form for this information is provided in the Bid Proposal section of these Contract Documents.

REFERENCES/ADDITIONAL REFERENCES
BIDDER shall include a list of three public agencies for which BIDDER has performed similar work, which includes renovations, rehabilitation and/or new construction of an aquatics facility, with a competition or recreational pool, and three public agencies for which BIDDER and/or his Subcontractor has performed similar work, within the past fifteen (15) years. A form for this information is provided in the Bid Proposal section of these Contract Documents.

NON-COLLUSION AFFIDAVIT
In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106, the AGENCY shall require all bidders to execute and submit a non-collusion affidavit with the Bid Proposal. A copy of the Non-Collusion Affidavit is provided in the Bid Proposal section of these Contract Documents.

CITY OF SANTA ANA
BID PROPOSAL
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

REFERENCES

The following are the names, addresses, and telephone numbers for **THREE** public agencies for which the BIDDER has performed similar work, which includes renovations, rehabilitation and/or new construction of an aquatics facility, with a competition or recreational pool, within the past fifteen years.

1. _____
Name and Address of Owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

2. _____
Name and Address of owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

3. _____
Name and Address of owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

The following are the names, addresses, and telephone numbers of all brokers and sureties from whom BIDDER intends to procure insurance and bonds.

_____

_____

_____

_____

CITY OF SANTA ANA
BID PROPOSAL
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

ADDITIONAL REFERENCES

The following are the names, addresses, and telephone numbers for **THREE** public agencies for which the BIDDER or subcontractor has performed similar work, which includes renovations, rehabilitation and/or new construction of an aquatics facility, with a competition or recreational pool, within the past fifteen years.

1. _____
Name and Address of Owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

2. _____
Name and Address of owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

3. _____
Name and Address of owner.

_____
Name and Telephone Number of person familiar with project.

_____ _____ _____
Contract Amount Type of Work Date Completed

The following are the names, addresses, and telephone numbers of all brokers and sureties from whom BIDDER intends to procure insurance and bonds.

_____

_____

_____

_____

CITY OF SANTA ANA
BID PROPOSAL
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

SECTION 2 - SCOPE OF THE WORK

2-1 WORK TO BE DONE

Add the following to this subsection:

The City utilizes construction management (CM) software to manage construction projects. The current software platform is Procore. The contractor shall be required to interface with the CM software for all aspects of construction, including, but not limited to, schedule, submittals, RFIs, substitution requests, contract documents, potential change orders, change orders, permits, contract documents, inspections, and progress payments. The City will provide the contractor's representatives access to the system. Where the manufacturer of any material or equipment provides written recommendations or instructions for its use or method or installation (including labels, tags, manuals or trade literature), such recommendations or instructions shall be compiled and delivered to the City prior to project acceptance.

Ground improvements are to be implemented at all areas of structural improvements. Design, engineering and implementation ground improvements to be provided under general contractor's scope of work. Refer to geotechnical report for criteria and recommendations.

2-2 PERMITS

The following supersedes the provisions of this subsection:

The contractor shall comply with all Federal, State or local laws, ordinances, or rules and regulations related to the performance of the work, which include but are not limited to the following:

a. Construction Permit. Contractor shall obtain a Construction Permit prior to the start of construction work. The Construction Permit Fee shall be an estimated cost of the time and material required by the City to provide labor oversight. The Contractor shall be required to provide a valid California State Contractor's License, Santa Ana Business License, Certificate of Insurance and to pay the Permit Fee (refer to current PWA Miscellaneous Fee Schedule), at time of Construction Permit issuance. The permit will be issued by Public Works based upon the approved plans and specifications, and the Construction Contract awarded by the City.

   The Bid Proposal contains a bid item that reflects the total amount required for the Construction Permit Fee. The Construction Permit Fee may be paid by the Contractor at the time of permit issuance. However, the Contractor has the option to fulfill the payment before the second progress payment is made by the City. Failure to comply with the deposit requirement by the second progress payment may result in enforcement actions taken against the Contractor.

   The final Construction Permit cost shall be the true cost of the time and material expended by the City to provide labor oversight and shall be the total amount determined at the completion of construction. If the effort to provide labor oversight exceeds the Permit Fee amount, the Contractor shall pay the City the amount due prior to releasing retention due to Contractor.

b. Business License. Each Prime Contractor and Subcontractor shall obtain and pay for a Santa Ana Business License. Detailed information concerning business license may be

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES

5-2 SPECIAL NOTICES
Add the following to this subsection:

Per Section 1771.4(a)(2) of the California Labor Code, Contractors are required to post job site notices, as prescribed by regulation.

5-3 LABOR
5-3.2 Prevailing Wages
Add the following to this subsection:

Certified Payroll Records shall be submitted to the Engineer every two weeks beginning with the actual start day of construction, and shall be consecutively numbered until the completion of the work. Progress payments will be withheld pending receipt of any outstanding reports.

The Contractor shall assure that a qualified supervisor is present at all times when work is being performed.

5-4 INSURANCE
The provisions of this subsection apply except as herein modified:

The Contractor shall provide insurance coverage as outlined in this Section 5-4. The limits shall be detailed and provided in the Certificate of Liability Insurance form included in Appendix D.

The Certificate of Liability insurance shall be provided by the successful BIDDER within ten (10) business days, after the successful BIDDER has received notice that the contract has been awarded. Failure to provide shall be just cause for the annulment of the award and the forfeiture of the proposal guaranty.

Contractor shall procure and maintain for the duration of the contract, and for 5 years thereafter, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees, and sub-contractors.

MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability** (CGL). Insurance Services Office (ISO) Form CG 0001 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than $5,000,000 per occurrence and $10,000,000 in the aggregate. Umbrella and excess insurance policies can be used to meet the required limits.

2. **Automobile Liability** (AL). Insurance Services Office Form CA 0001 covering Code 1(any auto), with combined single limit no less than $5,000,000.

3. **Workers' Compensation** (WC). As required by the State of California, with statutory limits, and Employers' Liability insurance with a limit of no less than$1,000,000 per accident, policy, employee for bodily injury or disease.

4. **Builder's Risk** (Course of Construction) (BR). Utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no co-insurance penalty provisions.

5. **Surety Bonds** as described below.

6. **Professional Liability** (PL) (if Design/Build). With limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate.

7. **Pollution Legal Liability** and/or Errors and Omissions (PLL). With limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate.
These insurance requirements shall not in any way act to reduce coverage that is broader or includes higher limits than the minimums shown above. If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Insurance provided under this contract shall not contain any restrictions or limitations which are inconsistent with City's rights under this contract.

Self-Insured Retentions
Self-insured retentions must be declared to and approved by City. At the option of City, Contractor shall cause its insurer(s) to reduce or eliminate such self-insured retentions as respects City; or Contractor shall provide a financial guarantee satisfactory to City guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

Other Insurance Provisions
The insurance policies are to contain, or be endorsed to contain, the following provisions:

1. City of Santa Ana, its City Council, officers, officials, employees, agents, and volunteers are to be covered as additional insureds on Contractor's CGL and AL policies with respect to liability arising out of work operations performed by or on behalf of Contractor including materials, parts, and equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of Contractor. Additional insured status can be provided in the form of an endorsement to Contractor's insurance.

2. For any claims related to this project, Contractor's insurance coverage shall be primary insurance coverage as respects City of Santa Ana, its City Council, officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by City of Santa Ana, its City Council, officers, officials, employees, agents, or volunteers shall not contribute with it.

3. A severability of interest provision must apply for all the additional insureds, ensuring that Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the insurer's limits of liability.

4. Contractor hereby grants to City a waiver of subrogation which any insurer of said Contractor may acquire against City of Santa Ana, its City Council, officers, officials, employees, agents and volunteers" by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement(s) that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not City has received a waiver of subrogation endorsement from any insurer(s).

5. Each insurance policy required by this clause shall provide that coverage shall not be canceled, suspended, voided, reduced in scope or in limits, non-renewed by the carrier, or materially changed except after thirty (30) days prior written notice has been given to City and ten (10) days prior written notice of policy cancellation or non-renewal due to non-payment.

6. Certificate Holder on each Evidence of Insurance certificate shall be:

City of Santa Ana, **Attention: (Name of Department Staff Responsible for Agreement)**, 20 Civic Center Plaza **M-XX (Responsible Staff's Department Mail Box)**, Santa Ana, CA 92701. The name and location of project must be indicated in the Description of Operations section of each certificate.

Builder's Risk (Course of Construction) Insurance
Contractor may submit evidence of Builder's Risk insurance in the form of Course of Construction coverage. Such coverage shall name City of Santa Ana as a loss payee as its interest may appear.
If the project does not involve new or major reconstruction, at the option of City, an Installation Floater may be acceptable. For such projects, a Property Installation Floater shall be obtained that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at City's site.

Claims Made Policies
If any coverage required is written on a claims-made coverage form:

1. The retroactive date must be shown, and this date must be before the execution date of the contract.

2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of work.

3. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, Contractor must

purchase extended reporting period coverage for a minimum of five (5) years after completion of work.

4. A copy of the claims reporting requirements must be submitted to City.

Acceptability of Insurers
Insurance is to be placed with insurers authorized to conduct business in the state of California with a current A.M. Best rating of no less than A:VII, unless otherwise acceptable to CITY.

Waiver of Subrogation
Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of City for all work performed by Contractor, its employees, agents and sub-contractors.

Verification of Coverage
Contractor shall furnish City with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause). A statement on a Certificate(s)/Evidence of Insurance will not be accepted in lieu of the actual endorsements required herein. Failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

Sub-Contractors
Contractor shall require and verify that all sub-contractors maintain insurance meeting all requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from sub-contractors. For CGL coverage, sub-contractors shall provide coverage with a form at least as broad as CG 20 38 04 13.

Surety Bonds
Contractor shall provide the following Surety Bonds:

1. Bid Bond
2. Performance Bond
3. Payment Bond
4. Maintenance Bond

The Payment Bond and the Performance Bond shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. If the warranty period specified in the contract is for longer than one year a Maintenance Bond equal to 10% of the contract price is required. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.

Failure to Maintain Insurance Coverage
If Contractor, for any reason, fails to maintain insurance coverage which is required pursuant to this contract, the same shall be deemed a material breach of contract. City, at its sole option, may terminate this contract at any time and obtain damages from Contractor resulting from said breach.

Special Risks or Circumstances
City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

5-7 SAFETY
5-7.8 Steel Plate Covers
5-7.8.1 General
Add the following to this subsection:

When backfilling operation of an excavation in the travel way, whether transverse or longitudinal cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring may be required to preserve unobstructed traffic flow.

5-7.8.2 Thickness
Add the following to this subsection:

For spans greater than five (5) feet-three (3) inches, a structural design for the steel plate bridging shall be prepared by a California registered civil engineer and approved by the Engineer. Steel plate bridging shall be designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual. The Contractor shall maintain steel plates with a non-skid surface having a minimum coefficient of friction equivalent to 0.35 as determined by California Test Method 342. The contractor may use standard steel plate with known coefficient of friction equal or exceeding 0.35.

5-7.8.3 Installation
Add the following to this subsection:

The following shall apply:

1. Steel plate installation shall be recessed by milling existing pavement to set flush with finish grade.

2. Steel plate shall fit snug and installed to operate with minimum noise. Bridging shall be secured against displacement.

3. Steel plate used for bridging must extend a minimum of twelve (12") inches beyond the edge of the trench.

4. The pavement shall be cold planned a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

ADDENDUM NO. 2
PROJECT NO. 22-1415

Santa Ana Memorial Park Aquatics Center Renovation

2102 S Flower Street,
Santa Ana, CA 92707

"Project Manual"

SECTION 00 01 10

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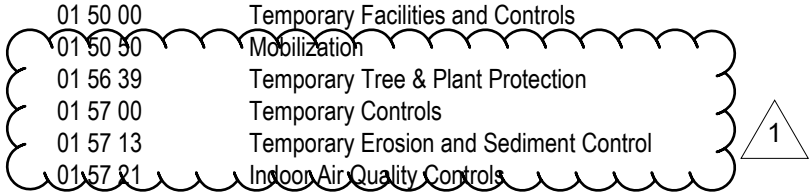
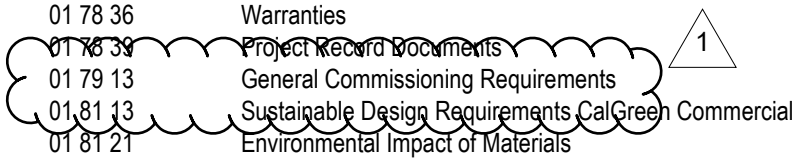
DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS





DIVISION 02 – EXISTING CONDITIONS

SECTION 01 1100 - SUMMARY OF WORK

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 SCOPE OF WORK

A. Abbreviated Written Summary: Briefly and without force and effect upon the Contract Documents, the Work of the Contract can be summarized as follows:
   1. Demolition & Reconstruction of aquatics center as described in the Instructions to Bidders Section of the project specifications.
   2. The project is located in Santa Ana, California, as shown on Documents prepared by ELS + SWA dated July 31, 2024.

1.3 DEFINITIONS

A. Order of Precedence: Where a conflict is found between the Drawings and Specifications, the more restrictive requirement takes precedence.

1.4 CONTRACTOR USE OF PREMISES

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

B. Coordinate use of premises and access to site with the Owner and Architect.

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

D. Keep driveways and entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials.

E. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

F. Limit use of site for work and storage to areas within the site boundaries unless specific areas are allowed in writing by the Owner.

G. Move any stored products, under Contractor's control, which interfere with operations of the Landlord, or separate contractor.

H. If necessary, obtain and pay for the use of additional storage or work areas needed for operations. Unless otherwise agreed upon, on-site storage shall be limited to areas of new construction.

I. Do not unreasonably encumber space with materials.

J. Work area must be kept clean and safe at all times.

K. No propane or similar flammable gas or liquid used in construction is permitted to be stored on the premises. It is to be removed from the premises when not in use during the off hours and weekends.

L. Repair damage caused by construction operations. Take precautions necessary to protect the building and occupants during the construction period.

M. Contractors shall submit both home and office numbers to the Owner's Project Manager's office for a minimum of 2 employees in the event they must be contacted during off hours or weekends.

1.5 COORDINATION

A. Coordinate work to assure efficient and orderly sequence of installation of construction elements.

B. Verify that characteristics of interrelated operation equipment are compatible; coordinate work having interdependent responsibilities for installing, connection to, and placing such equipment in service. Coordinate space requirements and installation of mechanical and electrical work; make runs parallel with lines of building.

C. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated. Coordinate locations of fixtures and outlets with finish elements.

D. Coordinate construction schedule and operations with Owner and Architect.

1.6 FIELD ENGINEERING

A. Provide project engineering service; establish lines and levels by use of recognized engineering survey practices.

B. Locate and protect control and reference points.

1.7 REGULATORY REQUIREMENTS AND REFERENCE STANDARDS

A. Regulatory Requirements:
1. Architect has contacted governing authorities and reviewed design requirements of local, state and federal agencies for applicability to Project.
2. Contractor shall be responsible for contacting governing authorities directly for necessary information and decisions bearing upon performance of Work.

B. Reference Standards:
1. For Products specified by association or trade standards, comply with requirements of referenced standard, except when more rigid requirements are specified or are required by applicable codes.
2. Applicable date of each standard is that in effect as of Contract date, except when a specific date is specified.

1.8 ORDERING OF MATERIALS

A. Certain materials are considered custom or long-lead items and must be expedited through submittals and ordering. Contractor shall verify delivery for all materials and schedule submittals and orders accordingly.

B. Contractor shall provide a Submittal/ Procurement Log prior to the start of construction, and update weekly during construction to be issued for Owner reference.

C. Contractor shall provide for the CM, a written verification that each custom or long-lead item has been ordered in sufficient time to meet proposed construction schedule.

D. When Specifications or Drawings call for materials or construction of a higher quality or larger size than required by governing codes, laws, rules and regulations, the provisions of the Specifications or Drawings shall take precedence.

1.9 CERTIFICATE OF SUBSTANTIAL COMPLETION

A. Certificate of Substantial Completion will be executed for the Work occupied.

B. Prior to Owner occupancy, pools, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 1100

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SECTION 01 2300 – ALTERNATES

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 SECTION INCLUDES

A. Submission procedures for alternates.

B. Documentation of changes to Contract Sum/Price and Contract Time.

1.3 RELATED REQUIREMENTS

A. Section 01 2513 - Product Substitution Procedures.

B. Section 01 3300 – Submittal Procedures: Work schedule affected by Alternates.

1.4 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
   2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Submit Alternates with full description of the proposed Alternate and the effect on adjacent or related components.

B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.6 SELECTION AND AWARD OF ALTERNATES

A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a 'difference' in Bid Price by adding to or deducting from the base bid price.

B. Bid will be evaluated on base bid price. After determination of preferred bidder, consideration will be given to Alternates and Bid Price adjustments.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Scoreboard & Timing System
   1. Base Bid Item: No new work.
   2. Add Alternate Item: The work under this item consist of providing & installing a scoreboard & timing system in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project per the Contract Documents. Structural base & foundation HSS steel posts shall be installed as part of the base bid.

B. Alternate No. 2: Wet Storage Canopy
   1. Base Bid Item: No new work.
   2. Add Alternate Item: The work under this item consist of providing & installing a wet storage canopy in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project per the Contract Documents. This shall include, canvas sails & attachment connections.

C. Alternate No. 3: Ornamental Fencing
   1. Base Bid Item: Replace existing palm trees with new trees.
   2. Alternate Item: The work under this item consist of providing & installing ornamental fencing in lieu of 4D Fencing, in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project per the Contract Documents. This work shall include concrete foundations, all posts/foundations, gates.

D. Alternate No. 4: Thickened Pool Shell (Competition Pool)
   1. Base Bid Item: Replace existing palm trees with new trees.
   2. Alternate Item: The work under this item consists of constructing a thickened pool shell (Competition Pool), pending Groundwater Study, in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project Contract Documents.

E. Alternate No. 5: Thickened Pool Shell (Recreational Pool)
   1. Base Bid Item: Replace existing palm trees with new trees.
   2. Alternate Item: The work under this item consists of constructing a thickened pool shell (Recreational Pool), pending Groundwater Study, in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project Contract Documents.

F. Alternate No. 6: Parking Lot (East Lot)
   1. Base Bid Item: Replace existing palm trees with new trees.
   2. Alternate Item: The work under this item consists of providing a slurry seal & restriping of the existing east end parking lot in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project Contract Documents.

END OF SECTION 01 2300

SECTION 01 2513 - PRODUCT 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 PRODUCTS

A. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.

B. "Named Products" are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.

C. "Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

D. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming one or More Manufacturers with a Provision for Substitutions: Submit a request for substitution, during Bidding only, for any manufacturer not named.

1.4 SUBSTITUTIONS

A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

B. When the Contractor has the option of selecting between two or more products, the product selected shall be compatible with products previously selected.

C. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

D. Where products are specified by name, accompanied by the term "or approved equal" comply with provisions herein for substitution submittals to obtain approval for use of an unnamed product.

E. Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.

F. Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
   1. Substitutions requested during the bidding period, and accepted prior to award of Contract.
   2. Revisions to Contract Documents requested by the Owner or Architect.
   3. Specified options of products and construction methods included in Contract Documents.
   4. Compliance with governing regulations and orders issued by governing authorities.
   5. Per PCC Section 3400, it needs to be stipulated that request for substitution only be made during the bid period. The deadline should be the same as the deadline for Bid RFIs

1.5 SUBSTITUTION REQUEST REVIEW

A. Requests for substitutions, submitted to the Architect by the Contractor after commencement of construction, will be reviewed at the Architect's standard hourly rate, charged to the Contractor as appropriate to the request.

B. The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
   1. Extensive revisions to Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of Contract Documents.
   3. The request is timely, fully documented and properly submitted.
   4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
   5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the

product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate contractors, and similar considerations.
8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

C. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

1.6 SUBSTITUTION SUBMITTALS

A. Requests for substitutions will be considered if received within 60 days after commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.

B. Submit 3 copies of each request for substitution in the form and in accordance with procedures for Change Order proposals.

C. Identify the product, or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Document compliance with requirements for substitutions, and the following information, as appropriate:

1. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
2. Samples, where applicable or requested.
3. A comparison of significant qualities of the proposed substitution with those specified.

4. A list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will be necessary to accommodate the proposed substitution.
5. A statement indicating the substitution's effect on the Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
6. Cost information, including a proposal of the net change, if any in the Contract Sum.
7. Certification that the substitution is equal-to or better in every respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include Contractor's waiver of rights to additional payment or time that may be necessary because of the substitution's failure to perform adequately.
8. 8. The Contractor warrants that they have investigated the proposed product and determined that it is equal to or superior in all respects to that indicated or specified.
9. 9. The Contractor waives claim for additional costs and time associated with the proposed product, which may subsequently become apparent.
10. 10. The Contractor shall provide a signed statement that the proposed product is in full compliance with the Contract Documents, and applicable regulatory requirements, requires no changes to specified controls and monitoring systems that may be specified in other Sections, and Certify that the Contractor will be responsible for coordination at no additional expense to the Owner
11. 11. The Contractor shall provide information on availability of maintenance service, and source of replacement materials, and provide a sample of Manufacturer’s standard form of guarantee or
12. warranty for proposed product.

D. Architect's Action: Within **5 business days** of receipt of the request for substitution, the Architect will request additional information necessary for evaluation. Within **10 business days** of receipt of the request, or one week of receipt of additional information, whichever is later, the Architect will notify the Contractor of acceptance or rejection. If a decision on use of a substitute cannot be made within the time allocated, use the product specified. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 2513

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SECTION 01 2600 CONTRACT MODIFICATION 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 handling and processing Contract modifications.

B. Related Requirements:
   1. Section 01 2516 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect may issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on the following form:
   1. AIA Document G710, "Supplemental Instructions" or similar form acceptable to the Engineer.

1.4 CONSTRUCTION CHANGE DIRECTIVE (CCD)

A. City-Initiated Proposal Requests: the Construction Manager (CM) will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
   1. Proposal Requests issued by the Construction Manager (CM) are not instructions either to stop Work in progress or to execute the proposed change.
   2. Within time specified in Proposal Request or seven calendar days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
      a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Include costs of labor and supervision directly attributable to the change.
      d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
      e. Quotation Form: Use form acceptable to the Construction Manager (CM).

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate such modification by submitting a request for a change to the Construction Manager (CM).

C. The Construction Manager (CM) on behalf of the City should issue the Construction Change Directive (CCD) with the supportive back-up prepared by the Architect and the City.
   1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
   2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   4. Include costs of labor and supervision directly attributable to the change.
   5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
   6. Comply with requirements in Division 01 25 00 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
   7. Proposal Request Form: Use form acceptable to the Construction Manager (CM).

1.5 CHANGE ORDER PROCEDURES

A. On City's approval of a Proposal Request, the Construction Manager (CM) will issue a Change Order for signatures of City and Contractor on AIA Document G701, or similar form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: the Construction Manager (CM) may issue a Construction Change Directive on AIA Document G714 or similar form. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT 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 Specifications Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:
1. Section 01 2600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Section 01 3200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
3. Section 01 3300 "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
   a. Application for Payment forms with continuation sheets.
   b. Submittal schedule.
   c. Items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to the City within **10 days** of Notice of Award.

B. Format and Content: Use the Specification’s table of contents as a guide to establish line items for the schedule of values. Provide at least one-line item

for each Specification Section. Provide additional detail as required or requested.

1. Identification: Include the following Project identification on the schedule of values:
    a. Project name and location.
    b. Name of Architect.
    c. City's Project number.
    d. Contractor's name and address.
    e. Date of submittal.
2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
    a. Item number.
    b. Description of the Work.
    c. Dollar value.
        1) Labor.
        2) Materials.
        3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Specification’s table of contents.
5. 5% for each SOV line item is held for Project Closeout requirements; the 5% will be released following approval of Project Closeout Documents received.
6. Round all amounts to nearest whole dollar; total shall equal the Contract Sum.
7. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, off-site but not yet installed. Proof for payment of material/equipment stored off-site.
8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities. Refer to definition of Allowances.
9. Provide a separate line item in the schedule of values for each purchase Contract. Show line-item value of purchase Contract. Indicate City payments or deposits, if any, and balance to be paid by Contractor.
10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.
    a. Owner Change Orders Approved the Schedule of Values shall have an added line item specifically stating the Amount of the approved Owner Change Order; If the Owner Change Order consist of multiple Subcontractors the issuance of monthly

payment request the General Contractor must present proof of percent complete for each listed Subcontractor

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by City.
   1. Initial Application for Payment, Application for Payment at time of Project Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between City and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Progress payments shall be submitted to Construction Manager (CM) by the twenty-fifth day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
   1. Submit draft copy of Application for Payment five days prior to due date for review by Construction Manager (CM).
   2. Schedule site walk with General Contractor Superintendent and Project Manager with the Construction Manager to field verify percent complete. Architect and/or City may attend.

D. Application for Payment Forms: Use forms acceptable to Architect and City for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
   1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
   2. Include amounts for Work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for Work completed at time of Application for Payment.
   3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
   4. Indicate separate amounts for Work being carried out under City-requested Project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to City, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials. Provide supportive photos for verification.
3. Provide summary documentation for stored materials indicating the following:
    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Email one signed and notarized original copy of each Application for Payment to City's Construction Manager by a method ensuring receipt within 24 hours. City's Construction Manager copy shall include waivers of lien and similar attachments.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. City reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit waivers of lien on forms complying with California law, executed in a manner acceptable to City.

I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from Subcontractors, Sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. City reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who could be lawfully entitled to a lien.

5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to City.

J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of Subcontractors.
   2. Schedule of values.
   3. Contractor's construction schedule (preliminary if not final).
   4. Submittal schedule (preliminary if not final).
   5. List of Contractor's principal consultants.
   6. Copies of building permits.
   7. Initial progress report.
   8. Report of preconstruction conference.

K. Progress Pay Application for Monthly Payment.
   1. Submit previous payment Unconditional Lien Release for proof of payment.
   2. Issue updated schedule.
   3. Provide confirmation As-Built Plans were updated.
   4. Provide summary month end status report on status of work complete.
   5. List issues of 'critical' to be addressed as outstanding.
   6. All supportive documentation to justify the percent complete for each line item.

L. Application for Payment at Project’s Completion: Submit an Application for Payment showing 100 percent completion for portion of the Work claimed as complete.
   1. Include documentation supporting claim that the Work is complete and a statement showing an accounting of changes to the Contract Sum.
   2. This application shall reflect any Certificates of Partial Project Completion issued previously for City occupancy of designated portions of the Work.

M. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. Final, unconditional lien releases (in exchange for final payment).
   5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   6. AIA Document G706A, "Contractor's Affidavit of Release of Liens."

7. AIA Document G707, "Consent of Surety to Final Payment."
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Project Completion or when City took possession of and assumed responsibility for corresponding elements of the Work.
10. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 2900

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SECTION 01 3100 - 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, but not limited to, the following:
   1. General Project coordination procedures.
   2. Coordination drawings.
   3. Requests for Information (RFIs).
   4. Project meetings.

B. Related Requirements:
   1. Section 01 3300 Submittal Procedures.
   2. Section 01 3200 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
   3. Section 01 7300 "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   4. Section 01 7700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request For Information (RFI) from Architect or Contractor, seeking information from each other during construction.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing Subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by Subcontract.
   3. Drawing number and detail references, as appropriate, covered by Subcontract.
   4. Key Personnel Names: Within 15 calendar 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.

1.5 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 City 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 to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, 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. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as City's property.

1.6 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Prepare coordination drawings to comply with accepted industry drafting standards. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    a. Applicable Drawings may be used as a basis for preparation of coordination drawings, provide title blocks, stamps and certifications are removed. Prepare additional sections, elevations, and details as needed to describe relationship of various systems and components.
        1) Provide review stamp, with signature and date, of each trade proposed to Work within the opening or penetration
    b. Coordinate the addition of trade-specific information to the coordination drawings by multiple Contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

1) Provide review stamp, with signature and date, of each Contractor and trade proposed to Work within the opening or penetration.

c. Indicate functional and spatial relationships of components of architectural, engineering, structural, civil, mechanical, and electrical systems.
   1) Grid lines and levels, and references to appropriate Contract drawings.
   2) Location and dimensions of openings and penetrations.

d. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

e. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.

f. Show location and size of access doors required for access to concealed dampers, valves, and other controls.

g. Indicate required installation sequences.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
   a. Include all items located within the opening or penetration, and dimensioned clearance to edge of penetration. Include framing, equipment, suspension systems, piping, ductwork, cable systems and other construction. Include insulation, supports, clamps, sealants and accessory items.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
   a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
   b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
   c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
   a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) diameter and larger.
   b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
   c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
   d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire Protection System: Show the following:

a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.

9. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 01 Section "Submittal Procedures."

C. Coordination Digital Data Files: At Contractor's option, prepare coordination digital data files in accordance with the requirements of Division 01 Section "Submittal Procedures."
1. File Preparation Format: DWG, Version, operating in Microsoft Windows operating system.

1.7 REQUESTS FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect 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.
3. Submit one item for each RFI number.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect and Owner’s Representative.
6. RFI number, numbered sequentially.
7. RFI subject.
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 Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, 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.
    b. Photographs shall not be accepted as a substitute for architectural sketches. Photographs may be submitted as supplements to properly prepared sketches and coordination drawings.

C. RFI Forms: Software-generated form acceptable to Architect.
1. The City utilizes construction management (CM) software to manage construction projects. The current software platform is Procore. The contractor shall be required to interface with the CM software for all aspects of construction, including, but not limited to, schedule, submittals, RFISs, contract documents, inspections, and progress payments. The City will provide the contractor’s representatives access to the systems.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow 10 business 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.
   1. The following RFIs will be returned without action:
      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 information of Architect's actions on submittals.
      g. Incomplete RFIs or inaccurately prepared RFIs.
   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.
   3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 2600 Section "Contract Modification Procedures."
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within eight calendar days of receipt of the RFI response.
   4. Name and address of Architect.
   5. Date Architect's response was received.

E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within ten calendar days if Contractor disagrees with response.
   1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
   2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

F. Upon completion of Project, submit three complete archive copies of Project's Web site files to Architect in a digital storage format acceptable to the Architect.

G. Contractor, Subcontractors, and other parties granted access by the Contractor to Project's website shall execute a data licensing agreement in the form of an Agreement acceptable to the Architect.

1.8 PROJECT MEETINGS

A. General: The General Contractor will schedule and conduct basic meetings and conferences at Project site, unless otherwise indicated.
   1. Attendees: Entity responsible for conducting meeting shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
   2. Agenda: Entity responsible for conducting meeting shall prepare and distribute the meeting agenda.
   3. Minutes: Entity responsible for conducting meeting shall record significant discussions and agreements achieved, and distribute the meeting minutes to everyone concerned, within seven calendar days of the meeting.

B. Preconstruction Conference: The General Contractor shall attend the preconstruction conference before starting construction, for this specific 'Preconstruction Meeting' the Construction Manager will conduct the Preconstruction Meeting and issue Meeting minutes, to include but not limited to the following:
   1. Conduct the conference to review responsibilities and personnel assignments.

2. Attendees: City and their Construction Manager, Architect and Architect's 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. General Contractor shall provide all that is listed below prior to Preconstruction Meeting, a descriptive narrative statement and supportive documents related to each topic, including the following:
    a. Tentative construction schedules, including overall and rolling schedules
    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. Sustainable design requirements.
    m. Preparation of record documents.
    n. Use of the premises.
    o. Work restrictions.
    p. Working hours.
    q. City's occupancy requirements.
    r. Responsibility for temporary facilities and controls.
    s. Procedures for moisture and mold control.
    t. Procedures for disruptions and shutdowns.
    u. Construction waste management and recycling.
    v. Parking availability.
    w. Office, Work, and storage areas.
    x. Equipment deliveries and priorities.
    y. Security.
    z. Progress cleaning.
    aa. Labor law, including payment and reporting requirements.
4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Pre-installation Conferences: Contractor shall conduct a pre-installation conference at Project site before each construction activity that requires coordination with other contractors.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting.
    a. Advise the following of scheduled meeting dates:
        1) Architect
        2) Owner's Representative
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    a. Contract Documents.
    b. Options.
    c. Related RFIs.
    d. Related Change Orders.
    e. Purchases.
    f. Deliveries.
    g. Submittals.
    h. Sustainable design requirements.

i. Review of mockups.
j. Possible conflicts.
k. Compatibility problems.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written recommendations.
o. Warranty requirements.
p. Compatibility of materials.
q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other Work.
x. Required performance results.
y. Protection of adjacent Work.
z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: The Project closeout conference shall review requirements and responsibilities related to Project closeout.
1. If not conducted as part of a normally scheduled job progress meeting, The General Contractor shall schedule and conduct a Project closeout conference, at a time convenient to Architect and Contractor, but no later than thirty calendar days prior to the scheduled date of Project Completion.
2. Attendees: Authorized representatives of Architect, Construction Manager, City, 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 Project 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 material samples, attic 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 Project Completion and for final payment.
i. Submittal procedures.
j. Coordination of separate Contracts.
k. Requirements for completing sustainable design documentation.
l. Substantial Completion
m. Installation of City's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting shall record and distribute meeting minutes.

E. Progress Meetings: The General Contractor shall conduct progress meetings at weekly intervals.
   1. Coordinate preparation of payment requests with dates of meetings.
   2. Attendees: In addition to representatives of Architect, Construction Manager & City 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.
   3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
      a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule shall be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities shall be completed within the Contract Time.
         1) Review schedule for next period.
   4. Review present and future needs of each entity present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Status of sustainable design documentation.
      5) Deliveries.
      6) Off-site fabrication.
      7) Access.
      8) Site utilization.
      9) Temporary facilities and controls.
      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) Pending claims and disputes.
      19) Documentation of information for payment requests.
   5. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
      a. Schedule Updating: Contractor shall revise construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Contractor shall provide revised schedule to reporting entity so that it may be issued concurrently with the report of each meeting.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 3100

REQUEST FOR INTERPRETATION

Project Name:			RFI No.
To:	Contractor:		
Subject:			
Specified Section	Paragraph No.	Drawing No.	Detail No.
Category: ☐ Need for Clarification ☐ Unforeseen Condition ☐ Conflict Within Documents		☐ Coordination Problem ☐ Other	
Description:			
Contractor's Proposed Resolution:			
☐ Attachments: ☐ Cost Impact: $ (Estimated) ☐ Time Impact:			
Contractor Signature		Date:	
Engineer's Response:			
☐ Attachments:			
Engineer Signature:		Date:	

SECTION 01 3131 – REQUEST FOR INFORMATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specifications, apply to this Section.

1.2 SECTION INCLUDES

A. Procedures to be followed by Contractor upon discovery of any apparent conflicts, omissions, or errors in Contract Documents or upon having any question concerning interpretation.

1.3 DEFINITIONS

A. Order of Precedence: Where a conflict is found between the Drawings and Specifications, the more restrictive requirement takes precedence.

B. The City utilizes construction management (CM) software to manage construction projects. The current software platform is Procore. The contractor shall be required to interface with the CM software for all aspects of construction, including, but not limited to, schedule, submittals, RFIs, contract documents, inspections, and progress payments. The City will provide the contractor's representatives access to the systems.

1.4 PROCEDURES

A. Notification by Contractor:
   1. Submit all requests for clarification and additional information in writing, through Procore, to Architect using the Request for Information (RFI) form provided by Architect or a similar form approved by Architect or AIA Document G716 or software generated form with substantially the same content as indicated in section 1.4B.
   2. Number RFIs sequentially. Follow RFI number with sequential alphabetical suffix as necessary for each resubmission. For example, the first RFI would be "001". The second RFI would be "002". The first resubmittal of RFI "002" would be "002a".
   3. Limit each RFI to one issue on one subject and to no more than five questions.
   4. Submit RFIs if one of the following conditions occur:
      a. Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
      b. Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents.
      c. Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
      d. RFIs will not be recognized or accepted if, in the opinion of Architect, one of the following conditions exist and may result in the Architect requesting monetary compensation from the Contractor for time spent to review any of the following:
         1) Contractor submits the RFI as a request for substitution.
         2) Contractor submits the RFI as a submittal.
         3) Contractor submits the RFI under the pretense of a Contract Documents discrepancy or omission without thorough review of the Documents.

4) Contractor submits the RFI in a manner that suggest that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.
5) Contractor submits an RFI in an untimely manner without proper coordination and scheduling of work or related trades.

5. Ask for any clarification or request for information immediately upon discovery. Submit RFIs in a reasonable time frame so as not to affect the project schedule while allowing the full response time described below.
6. 6. Notification for RFIs posted after 2:00pm will be logged as being received the following day.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect and Owner's Representative.
6. RFI number, numbered sequentially.
7. RFI subject.
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 Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. 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 Log: Contractor shall maintain a log of all RFIs which shall indicate each RFI's status. Log shall be maintained current and shall be distributed at each regular jobsite meeting of City's Representatives, and Contractor.

1.5 RESPONSE TIME

A. Architect, whose decision will be final and conclusive, shall resolve such questions and issue instructions to Contractor within a reasonable time frame. In most cases, RFIs will receive a response within 10 business days. In some cases, this time may need to be lengthened for complex issues, or shortened for emergency situations, as mutually agreed by all parties.

B. Should Contractor proceed with the work affected before receipt of a response from Architect, within the response time described above, any portion of the work which is not done in accordance with Architect's interpretations, clarifications, instructions, or decisions is subject to removal or replacement and Contractor shall be responsible for all resultant losses.

C. Additional Detailed Instructions:
1. Architect may furnish additional detailed, written instructions to further explain the work and such instructions shall be a part of Contract Documents. Should additional detailed instructions in the opinion of Contractor constitute work in excess of the scope of Contract, Contractor shall submit written notification thereof to Architect within three calendar days following receipt of such instruction, and in any event prior to the commencement of work thereon.

2. Architect will then consider such notice and if Architect considered it justified, Architect's instructions will be revised, or an extra work authorization will be issued.
3. Contractor has no claim for additional compensation or extension of the schedule because of any such additional instructions unless Contractor gives Architect written notice thereof within the time frame as specified above.

D. Failure to Agree: In the event of failure to agree as to the scope of Contract requirements, Contractor shall follow procedures set forth in the disputes clause.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 3131

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SECTION 01 3200 - CONSTRUCTION PROGRESS 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 documenting the progress of construction during performance of the Work, including the following:
   1. Contractor's construction schedule.
      a. Upcoming Work Summaries (Short Interval Schedules).
   2. Construction schedule updating reports.
   3. Special reports.

B. Related Requirements:
   1. Section 01 4000 "Quality Requirements" for submitting a schedule of tests and inspections.
   2. Section 01 9113 "General Commissioning Requirements" for start-up and commissioning requirements.

1.3 DEFINITIONS

A. Activity: A discrete part of a Project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
   1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the schedule.
   3. Successor Activity: An activity that follows another activity in the schedule.

B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by the City of Santa Ana.

C. CPM: Critical path method, which is a method of planning and scheduling a construction Project where activities are arranged based on activity relationships. Relational calculations determine when activities can be performed and the critical path of the Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.
   1. Float time is not for the exclusive use or benefit of either City or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
   2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.

G. Project Completion: See General Conditions G-6.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following formats, of size required to display entire schedule for entire construction period:
   1. Paper copies, in the number required by Division 01 30 00 Section "Submittal Procedures."

B. Start-up construction schedule.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
   1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
   2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
   3. Total Float Report: List of all activities sorted in ascending order of total float.
   4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

E. Material Location Reports: Submit at monthly intervals.

F. Field Condition Reports: Submit at time of discovery of differing conditions.

G. Qualification Data: For scheduling consultant.

1.5 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 3100 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
   1. Discuss constraints, including Work stages.

1.6 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Contractors.

B. Coordinate Contractor's construction schedule with the schedule of values, list of Subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from entities involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

C. Contract Time generally refers to calendar days. Coordinate working days, nonworking days and holidays as required to correlate with Contract Time.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.

B. Activities: Treat each building, story or separate area as a separate numbered activity group for each principal element of the Work, as applicable. Comply with the following:
   1. Activity Duration: Define activities so no activity is longer than twenty calendar days, unless specifically allowed by Engineer.
   2. Procurement Activities: Include procurement process activities for the following long lead items and other major items, requiring a cycle of more than 60 calendar days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
   3. Insert list of major items or pieces of equipment.
   4. Submittal Review Time: Include review and resubmittal times indicated in Division 01 3000 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
   5. Startup and Testing Time: Include not less than fourteen calendar days for startup and testing.
   6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect’s administrative procedures necessary for certification of Substantial Completion.
   7. Punch List and Final Completion: Include not more than thirty calendar days for punch list and final completion.

C. Constraints: Include constraints and Work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
   1. Work Restrictions: Show the effect of the following items on the schedule:
      a. Coordination with existing construction.
      b. Uninterruptible services.
      c. Use of premises restrictions.
      d. Environmental control.

D. Upcoming Work Summaries (Short Interval Schedules): Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update, but not less than two week's activity. Submit an updated upcoming Work schedule at each job progress meeting. Summarize the following issues:
   1. Unresolved issues.

2.2 START-UP CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit start-up horizontal bar-chart-type construction schedule within 14 calendar days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first Workday of each week with a continuous vertical line. Outline significant construction activities for first 90 calendar days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Preparation: Indicate each significant construction activity separately. Identify first Workday of each week with a continuous vertical line.
   1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. Start-up Network Diagram: Submit diagram within 14 calendar days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 calendar days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

B. CPM Schedule Requirements: Prepare Contractor's construction schedule using a cost- and resource-loaded, time-scaled CPM Network analysis diagram for the Work.
   1. Develop Network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 60 calendar days after date established for the Notice to Proceed.

C. CPM Schedule Requirements: Prepare a list of all activities required to complete the Work. Using the start-up Network diagram, prepare a skeleton Network to identify probable critical paths.
   1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
      a. Submittal Prep/ Issuance
      b. Architect Review
      c. Delivery.
      d. Fabrication.
      e. Testing and commissioning.
   2. Deferred Submittals: List each deferred Submittal and include submittal preparation, Architect review, City review and Permit.
   3. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain City approval prior to assigning costs to fabrication and delivery activities. Assign costs under principal Subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.

D. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
   1. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
      a. Submit value summary printouts one week before each regularly scheduled progress meeting.

2.5 REPORTS

A. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. List of stored materials away from Project site shall be categorized by each Specification Section.

2.6 SPECIAL REPORTS

A. General: Submit special reports directly to Construction Manager within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Revise schedule monthly or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

B. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

C. As the Work progresses, indicate final completion percentage for each activity.

D. Distribution: Distribute copies of approved schedule to Construction Manager, Architect & City, separate Contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

END OF SECTION 01 3200

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SECTION 01 3216 - CONSTRUCTION PROGRESS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Submittals Schedule.
4. Three-Week look Ahead Schedule.
5. Field Condition Reports.
6. Daily Construction Reports

B. Related Sections include but are not limited to the following:

1. SECTION 01 2900 - PAYMENT PROCEDURES for submitting the Schedule of Values.
2. SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION for submitting and distributing meeting and conference minutes.
3. SECTION 01 3300 - SUBMITTAL PROCEDURES for submitting schedules and reports.
4. SECTION 01 4000 - QUALITY REQUIREMENTS for submitting a schedule of tests and inspections.
6. SECTION 01 7913 - GENERAL COMMISSIONING REQUIREMENTS

1.3 CONSTRUCTION SCHEDULE/SUBMITTALS

A. Scheduler Qualifications: Designate, in writing and within five (5) calendar days after Notice of Award, person responsible for preparation, maintenance, updating, and revision of all schedules.

1. Qualifications of Responsible Scheduler:

a. Authority to act on behalf of Contractor
b. Minimum five (5) years verifiable experience in preparation of complex construction schedules of projects of similar value, size, and complexity.
c. Knowledge of PM scheduling utilizing Primavera P6.
d. The Owner through its Construction Manager (CM) reserves the right to disapprove scheduler when submitted by Contractor if not qualified. CM reserves the right to remove scheduler from the Project if found to be incompetent.

B. Submittals Schedule: The Contractor will be responsible to enter the list of anticipated submittals into the Owner established web-based Contract Management system. The submittal schedule will be a version of the Submittal Log generated from the System.

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's and Construction Manager's final release or approval.

C. Construction Schedule:

1. Schedule Orientation Meeting: Within fourteen (14) Days of the official Contract start date stated in the Notice to Proceed, Owner's Project Manager will conduct a Schedule Orientation Meeting to review the requirements of the Contract Documents for preparing, submitting, updating, and revising the various Project schedules. This is a separate meeting from the Preconstruction Conference and is dedicated exclusively to discussions about the scheduling requirements for the Project.
2. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Software: Primavera P6
4. Format: Submit an electronic copy of schedule in XER format (as well as PDF) on USB (thumb drive) to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label. Include XER data in excel format as well, with columns as defined by the Construction Manager. Email may be accepted as a form of submission for progress updates upon approval of the baseline schedule.

D. Critical Path Method (CPM) Reports: Concurrent with CPM schedule, submit in PDF format each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.
4. "Claim Digger" report generated from P6 software depicting 10 agreed upon schedule characteristics.

E. Field Condition Reports: Submit one hard copy and electronically in PDF format at time of discovery of differing conditions.

1.4 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in (PM) scheduling and reporting, with capability of producing (PM) reports and diagrams within 24 hours of Construction Manager's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, inducing phasing, work stages, area separations, interim milestones, and partial Cities occupancy.
4. Review delivery dates for Owner-furnished products and move-in.
5. Review schedule for work of Cities separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion, startup, commissioning and certifying procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTAL SCHEDULE

A. Preparation: Submittal activities (Submit, Review, Accept) are to be integrated in and logically tied to the construction activities - from the complete schedule a final layout/report will provide Schedule arranged in chronological order by dates required by construction schedule.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Initial Submittal: Submit concurrently with preliminary Construction Schedule. List those required to maintain orderly progress of the Work and those required early because of long lead-time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Submit within time frame specified in General Conditions Specification section.

B. Submit schedule in XER format readable in Primavera P6 as well as PDF (with columns visible as required by Construction Manager).

C. Duration of Schedule: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion and Final Completion, including all weather days.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

D. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity other than administrative activities is longer than 15 calendar days, unless specifically allowed by Construction Manager.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 30 calendar days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Include submittals and mock-up fabrication.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate and integrate submittal review times in Contractor's Construction Schedule.

4. Startup, Testing, Commissioning and Certifying Time: Include not less than 28 calendar days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect and Construction Manager's administrative procedures necessary for certification of Substantial Completion.

E. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner. This shall include, but not be limited to the following:
   a. Furniture
   b. Data Center Final Connection
   c. Call Center Consoles
   d. Main building antenna Installation
   e. Alternates – as needed

   This list may be added to during the course of the project.

3. Products Ordered in Advance: Include a separate activity for each product.
4. Owner-Furnished Products: Include a separate activity for each product.
5. Work Restrictions: Show the effect of the following items on the schedule:

   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Partial occupancy before Substantial Completion. Include the partial occupancy of the Data Center and its effect on the completion of the project.
   e. Use of premises restrictions.
   f. Provisions for future construction.
   g. Seasonal variations.
   h. Environmental control
6. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

   a. Submittals.
   b. Purchases.
   c. Mockups.
   d. Fabrication.
   e. Sample testing.
   f. Deliveries.
   g. Installation.
   h. Tests and inspections.
   I. Adjusting.
   j. Curing.
   k. Startup, commissioning, certifying and placement into final use and operation.
7. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

   a. Structural Completion
   b. Permanent Enclosure
   c. Data Center Ready for Owner Equipment
   d. Call Center Ready for Owner Consoles
   e. Substantial Completion.
   f. Final Completion

F. Milestones: Include milestones indicated in the Contract Documents in Schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, anticipated Owner installed equipment and Final Completion.

G. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

A. Preparation: Indicate each significant construction activity separately. Include all construction activities for duration of Work based on included activities.

B. Issuance of Preliminary Schedule shall be 14-days after notification of 'Selected Responsive General Contractor' and then further updated and issued prior to 'Kick-off Meeting'.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare CPM schedule in PDM (precedence diagram method) format.

B. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized time-scaled CPM diagram for the Work.

1. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Construction Manager's approval of the schedule.
2. Establish procedures for monitoring and updating (CPM) schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
3. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

    a. Preparation and processing of submittals including resubmittals.
    b. Mobilization and demobilization.
    c. Purchase of materials.
    d. Delivery.
    e. Fabrication.
    f. Utility interruptions.
    g. Installation.
    h. Work by Owner that may affect or be affected by Contractor's activities.
    i. Testing and commissioning.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

3. Weather Days Allowance: Adjustments to Contract Time(s) due to weather will be allowed only for usually severe weather or resulting site conditions that affect the progress of activities on the Critical Path of the Official Progress Schedule.

a. No Contract Time extension for rain will be allowed for any month until the number of Days of rain for that month as indicated below has been exceeded. Rainfall will be considered unusually severe only when the Days of rain (defined as more than one-tenth (1/10") of an inch of rain per Day per local NOAA /Weather Underground weather station readings) in any month exceeded the following number of Days of rain per month

Month	No. Of Days
January	5
February	4
March	4
April	2
May	1
June	0
July	0
August	0
September	2
October	4
November	4
December	5

b. Contractor must exercise due diligence in protecting the Work and the Work site from adverse impacts of weather by:

1) Taking appropriate preventative actions before anticipated inclement weather to protect the Work and Work site from potential adverse effects of the weather.
2) Taking corrective action during the inclement weather to protect the Work and Work site from the actual and potential adverse effects of the inclement weather; and
3) Taking corrective action after the inclement weather to remedy, prevent, and/or mitigate the negative impacts of the adverse weather on the Work and Work Site.

c. Weather Delays

1) Except for rain, if weather conditions are the basis for delays in the continuance or completion of the Work or any designated portion of the Work, Contractor must substantiate the weather conditions were abnormal, based on the climatologically data for the immediately preceding10-year period. For all weather-related delays, the Contractor must establish that the adverse weather conditions could not have been reasonably anticipated.
2) Rain will not be considered abnormal unless it results in precipitation that exceeds the maximum daily precipitation for the cumulative number of Days per month indicated on 3.a above.
3) When the amount of rain is considered to be abnormal, extensions to the Contract Time(s) will be granted where the condition of the site, as determined by the Owner, is such that Contractor can perform no Work identified as Critical Path Work on the current version of the Official Progress Schedule in effect at the time the delay occurred.
4) Include as a separate identifiable activity on the critical path, an activity labeled "Weather Days Allowance". Insert this activity at the end of the schedule.
5) Insert an activity in critical path to reflect weather day occurrences when weather days are experienced and accepted by the Construction Manager. Identify this activity as a weather delay.
6) Reduce duration of weather Days Allowance activity as weather delays are experienced, accepted and inserted into the schedule. Remaining weather days in weather allowance at completion of project is considered float.

d. Within twenty-four (24) hours from the beginning of any Critical Path delay to the Official Progress Schedule, Contractor must notify Owner in writing of the causes of delay.

e. Within fourteen (14) days from the end of any Critical Path delay to the Official Progress Schedule, Contractor must submit two (2) hard copies and electronic data files on USB thumb drive, of all supporting information to validate the impact of the delay on the Contract Time.

f. Owner will ascertain the facts and the extent of the delay and adjust the Contract Time(s) for completing the Work when, in Owner's judgment, the facts justify an adjustment. Owner's determination is final and conclusive.

D. Initial Issue of Schedule: Prepare initial time-scaled diagram from a list of straight "early start-early finish-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.

E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

2.5 THREE-WEEK LOOK AHEAD SCHEDULE

A. Prepare weekly, for the weekly Project meeting, a computer-generated Three-week look ahead schedule (bar chart) which is consistent with the CPM schedule and depicts daily labor activities.

B. Schedule must include description as well as activity ID for each task that aligns with the project schedule. Schedule must include name of subcontractor responsible for the work.

C. The schedule will consist of the prior week, current week, and the following three (3) weeks.

D. **Lookahead schedule is to be submitted electronically before noon on the day prior to the weekly Project meeting.**

2.6 REPORTS

A. Field Condition Reports: Issue reports to the Construction Manager Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

B. Daily Construction Reports: Prepare/ issue daily construction reports to the Construction Manager, recording the following information concerning events at Project site:
   1. List of subcontractors and quantity of workforce for each at Project site (including for General Contractor).
   2. Ongoing tasks, with all Activity IDs aligning with project schedule activity.
   3. Equipment at Project site.
   4. Material deliveries.
   5. High and low temperatures and general weather conditions.
   6. Accidents.
   7. Stoppages, delays, shortages, and losses.
   8. Meter readings and similar recordings.
   9. Orders and requests of authorities having jurisdiction.
   10. Services connected and disconnected.
   11. Equipment or system tests and startups.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Scheduling Consultant: Not Used

B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities

   1. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, all actual starts and finishes, and activity durations.
   2. As the Work progresses, indicate Actual Completion percentage for each activity.

C. Review and Acceptance of Schedules: Construction Manager will review Preliminary Schedule, Schedule Updates, Schedule Revisions, and Time Impact Analyses to ascertain compliance with specified project constraints, compliance with milestone dates, reasonableness of durations and sequence, accurate inter-relationships and completeness.

   1. Contractor to submit preliminary schedule reflecting activities for the first 180 days within 21 calendar days following Notice to Proceed. A revised full/complete preliminary schedule shall be submitted within 60 calendar days following Notice to Proceed.
   2. Construction Manager and Owner will issue written comments following completion of review of Preliminary Schedule within fourteen (14) calendar days after receipt. Construction Manager will return written comments on review of Schedule Updates and Schedule Revisions and Time Impact Analyses to Contractor within fourteen (14) calendar days after receipt.
   2. Revise and resubmit schedule in accordance with Construction Manager's comments within seven (7) calendar days after receipt of such comments, or request joint meeting to resolve objections. If a meeting is requested, the Contractor and all major subcontractors will participate in the meeting with Construction Manager. Revise and Resubmit schedule within seven (7) calendar days after meeting.
   3. When Schedule reflects Cities and Contractor's agreement of project approach and sequence, schedule will be accepted by Owner. Use accepted schedule for planning, organizing, and directing the work and for reporting progress.

D. Distribution:

   1. Transmit 3 copies and 1 (USB thumb drive) containing native format and pdf file, minimum size of 24" x 36" of approved schedule to Construction Manager for distribution. Electronic copies to be uploaded to e-Builder in an appropriate location.
   2. When revisions are made, transmit updated schedules to the Construction Manager for distribution.

E. Adjustment of Contract Time: If the Contractor believes that the Owner has impacted its work, such that the project completion date will be delayed, the Contractor must submit proof demonstrating the delay to the critical path. Contractor shall notify Owner and Construction Manager in writing within 48 hours if Contractor believes the Owner has impacted their work that may delay their project completion date. This proof, in the form of a Time Impact Analysis, may entitle the Contractor to an adjustment of contract time.

1. The Time Impact Analysis:
   a. The Time Impact Analysis submitted by the Contractor shall utilize the accepted schedule update that is current relative to the time frame of the delay event (change order or other Owner-caused delay). The Contractor shall represent the delay event in the schedule by:
      1) Inserting new activities associated with the delay event into the schedule;
      2) Revising activity logic; or
      3) Revising activity durations.
   b. If the project schedule's critical path and completion date are impacted as a result of adding this delay event to the schedule, a time extension equal to the magnitude of the impact may be warranted. Contractor to incorporate into the Master Project schedule if it is agreed to by the Owner.
   c. The Time Impact Analysis submittal shall consist of:
      I) A fragnet of the portion of the schedule affected by the delay event;
      2) A narrative explanation of the delay issue and how it impacted the schedule: and
      3) A (USB thumb drive) containing the schedule file used to perform the Time Impact Analysis.

F. Impacts/Delay to Schedule.

1. If requested by the Owner, the Contractor shall submit, with its updates to the Approved Construction Schedule, a narrative statement including a description of current and anticipated problem areas of the Work, delaying factors and their impact, and an explanation of corrective action taken or proposed by the Contractor. If the progress of the Work is behind the Approved Construction Schedule, the Contractor shall indicate what measures will be taken by the Contractor to place the Work back on schedule. The Owner may, from time to time, and in the Owner’s sole and exclusive discretion, transmit to the Contractor's Performance Bond Surety the Approved Construction Schedule, any updates thereof and the narrative statement described hereinabove. The Owner's election to transmit, or not to transmit such information, to the Contractor's Performance Bond Surety shall not limit the Contractor's obligations under the Contract Documents.
2. When a delay to the project as a whole can be avoided by revising preferential sequencing or logic, and the Contractor chooses not to implement the revisions, the Contractor will not be entitled to a time extension or compensation for extended overhead.
3. Indicate clearly that the Contractor has used, in full, all project float available for the work involved in the request, including any float that may exist between the Contractor's planned completion date and the Contract completion date. Utilize the latest version of the Schedule Update accepted at the time of the alleged delay, and all other relevant information, to determine the adjustment of the contract time.
4. Float shall be for the mutual benefit of the Owner and the Contractor. Adjustment of the Contract Times will be granted only when the Contract Float has been fully utilized and only when the revised date of completion of the Work has been pushed beyond the contract completion date. Adjustment of the Contract Times will be made only for the number of days that the planned completion of the work has been extended.
5. Actual delays in activities which do not affect the critical path work or which do not move the Contractor's planned completion date beyond the Contract completion date will not be the basis for an adjustment to the contract time.
6. The Contractor shall not be entitled to job-site or home office overhead beyond the Contractor's originally planned occupancy of the site if completion of the project occurs within the specified contract time.

7. Notify Construction Manager of a request for contract time adjustment. Submit request in accordance with the General Conditions. In cases where the Contractor does not submit a request for contract time adjustment for a specific change order, delay, or Contractor request within the specified period of time, then it is mutually agreed that the particular change order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.
8. The Construction Manager will, within twenty-one (21) calendar days after receipt of a contract time adjustment, request any supporting evidence, review the facts and advise the Contractor in writing.
9. The new Progress Schedule data, if accepted by the City, shall be included in the next monthly Schedule Update.

3.2 FINAL SCHEDULE SUBMITTAL

A. As a condition precedent to the release of retention, the final Schedule Update shall be identified by the Contractor as the As-Built Schedule.

B. The As-Built Schedule shall reflect the exact manner in which the project was constructed by reflecting actual start and completion dates for all activities accomplished on the project.

C. The As-Built Schedule shall be signed and certified by the Contractor's Project Manager and scheduler as being an accurate record of the way in which the project was actually constructed.

3.3 FORMS

A. Submittals Schedule Form: Will be generated from the Contractor's schedule file as a filtered layout/report.

END OF SECTION

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1. 1 SUMMARY

A. This Section describes the requirements for furnishing photographs depicting work progress.

1. 2 DESCRIPTION

A. Furnish photographs of the site construction throughout the progress of the Work.

B. Take additional photographs on cutoff date for each Application for Payment to document extent of all work complete.

C. Take additional photographs of specific items as requested by the Construction Manager, Owner, Architect or Inspector.

D. In addition, take photographs at beginning and completion of the following elements:

1. Pre-mobilization (prior to construction)
   a. Contractor to conduct a photographic and or video record of existing conditions surrounding subject property including streets.
2. Site clearing.
3. Excavation
4. Utility Trenching
5. Foundations
6. Structural Framing
7. Steel Erections
8. Enclosure of Building
9. Interior
9. Landscaping
10. Final Completion.

1. 3 PRINTS

A. NOT USED

1. 4 ELECTRONIC FILES

A. Delivery Method: Deliver pictures & videos via Procore, indexed and in chronological order, to
Construction Manager as part of Record Documents Catalog. All pictures to have a date and time stamp.

B. All photos to be in a JPEG format.

C. Upload photos on a weekly basis to the project management software organized in folders separated by date. Upload photos related to each Application for Payment under a separate folder.

D. Make photos available to Owner at any time in electronic format.

E. Quantity and locations of pictures

a. Contractor to take a minimum of 15-20 pictures daily for each work shift (as applicable) to document work performed that day.

b. Photographic documentation to be clear and show the work. Blurred phots will not be accepted.

c. Photos to show the date, time, image, and location.

1. 5 TECHNIQUE

A. Factual presentation, with correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 3300 - 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 SECTION INCLUDES

A. Administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 RELATED SECTIONS

A. Section 01 4339 – Mock-ups.

B. Divisions 02 through 35 Sections for specific requirements for submittals in those Sections.

1.4 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.5 DISTRIBUTION OF SCHEDULES

A. 21-days after Contractor is notified as the 'Selected Responsive Bidder' shall submit a detail listing Submittal Log as all listed in this Section and other Sections and issued to Architect, City and Construction Manager for review and comment.

B. Distribute copies of the Submittal Schedule to the Architect, Construction Manager, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the temporary field office. When revisions are made, distribute to the same parties and post in the same locations.

C. Updating: Revise Schedule after each meeting or activity, where revisions have been made. Issue the updated Schedules concurrently with report of each meeting.

1.6 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
   1. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
   2. Contractor and Architect are required to use this service.
   3. It is Contractor's responsibility to submit documents in PDF format.
   4. Subcontractors, suppliers, Construction Manager and Architect's consultants are to be permitted to use the service at no extra charge.
   5. Users of the service need an email address, Internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com, unless such software capability is provided by the service provider.
   6. PDF files shall be formatted to allow markups to be made by Contractor, Construction Manager, Architect and Architect's consultants.
   7. Paper document transmittals will not be reviewed; emailed PDF documents will not be reviewed.
   8. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: The City utilizes construction management (CM) software to manage construction projects. The current software platform is Procore. The contractor shall be required to interface with the CM software for all aspects of construction, including, but not limited to, schedule, submittals, RFIs, contract documents, inspections, and progress payments. The City will provide the contractor’s representatives access to the systems.

   Where the manufacturer of any material or equipment provides written recommendations of instructions for its use or method or installation (including labels, tags, manuals or trade literature), such recommendations or instructions shall be compiled and delivered to the City prior to the project acceptance.

      1. Submittal's by General Contractor are to be directly issued to the Architect through the use of Procore and/or 'EQUAL' Construction Program Software; and cc to Construction Manager.

C. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.

D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

1.7 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided for reference only by Architect for Contractor's use in preparing submittals.

A. 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. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Architect reserves Architect and Owner’s Representative reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
   1. Contractor shall prepare within thirty (30) calendar days after the award of the Contract, unless otherwise specified, a preliminary Submittals Schedule for Shop Drawings, Product Data, Samples and other items required by the Contract Documents. The Submittals Schedule shall take into consideration the relationship between submittals required such that all related submittals can be reviewed at the same time.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's and Owner’s Representative's receipt of submittal.
   1. 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.
   2. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect Owner’s Representative will advise Contractor when a submittal being processed must be delayed for coordination.
   3. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

4. Resubmittal Review: Allow 10 business days for review of each resubmittal.

D. Identification: Place a permanent label or title block on each submittal for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Owner's Representative.
   3. Include the following information on label for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name and address of Architect and Owner's Representative.
      d. Name and address of Contractor.
      e. Name and address of subcontractor.
      f. Name and address of supplier.
      g. Name of manufacturer.
      h. Submittal number or other unique identifier, including revision identifier.
         1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 1000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 1000.01.A).
      i. Number and title of appropriate Specification Section.
      j. Drawing number and detail references, as appropriate.
      k. Location(s) where product is to be installed, as appropriate.
      l. Other necessary identification. The general contractor shall review the submittal and make any corrective comments or markups. They shall provide a statement stating that they have reviewed the submittal and certify that it is appropriate for this project.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect or Owner's Representative observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
   1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Owner's Representative.
   2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form.

Architect and Owner's Representative will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Use AIA Document G810.
2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Owner's Representative on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked "Reviewed." Or "Reviewed, Make Correction Noted. No Resubmittal Required".

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

J. Use for Construction: Use only final submittals with mark indicating "Reviewed" Or "Reviewed, Make Correction Noted. No Resubmittal Required" taken by Architect and Owner's Representative.

1.8 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: A limited amount of CAD backgrounds will be provided for reference only. Contractor is required to verify all conditions in the field. All submittal/shop drawings are required to be created by the Contractor.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.
   1. Submit electronic submittals directly to extranet specifically established for Project.

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 printed 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 written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Standard color charts.
    e. Manufacturer's catalog cuts.
    f. Wiring diagrams showing factory-installed wiring.
    g. Printed performance curves.
    h. Operational range diagrams.
    i. Mill reports.
    j. Standard product operation and maintenance manuals.
    k. Compliance with specified referenced standards.
    l. Testing by recognized testing agency.
    m. Application of testing agency labels and seals.
    n. Notation of coordination requirements.
4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit digital copies of Product Data, unless otherwise indicated. Architect, through Owner's Representative, will return digital copies. Mark up and retain one returned copy as a Project Record Document.

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.
    1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
        a. Dimensions. Verified on site if applicable.
        b. Identification of products.
        c. Fabrication and installation drawings.
        d. Roughing-in and setting diagrams.
        e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
        f. Shop work manufacturing instructions.
        g. Templates and patterns.
        h. Schedules.
        i. Design calculations.
        j. Compliance with specified standards.
        k. Notation of coordination requirements.
        l. Notation of dimensions established by field measurement.
        m. Relationship to adjoining construction clearly indicated.
        n. Seal and signature of professional engineer if specified.
        o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

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: Attach label on unexposed side of Samples that includes the following:
      a. Generic description of Sample.
      b. Product name and name of manufacturer.
      c. Sample source.
      d. Number and title of appropriate Specification Section.
   3. 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 Owner's property, are the property of Contractor.
   4. 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 one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Owner’s Representative, will return submittal with options selected.
   5. 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, but are not limited to, 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 and Owner’s Representative 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. Application for Payment: Comply with requirements specified in Division 1 Section "Applications and Certificates for Payment."

F. Schedule of Values: Comply with requirements specified in Division 1 Section "Applications and Certificates for Payment."

G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.
   4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect, through Owner's Representative, will return two copies.
      a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect and Owner's Representative will not return copies.
   2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with

project names and addresses, names and addresses of architects and owners, and other information specified.

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

E. Installer Certificates: Prepare 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.

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

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

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

I. Material Test Reports: Prepare 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.

J. Product Test Reports: Prepare written reports indicating 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.

K. Research/Evaluation Reports: Prepare 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.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

M. Preconstruction Test Reports: Prepare 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.

N. Compatibility Test Reports: Prepare 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.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, 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.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
   1. Preparation of substrates.
   2. Required substrate tolerances.
   3. Sequence of installation or erection.
   4. Required installation tolerances.
   5. Required adjustments.
   6. Recommendations for cleaning and protection.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
   1. Name, address, and telephone number of factory-authorized service representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

2.3 DELEGATED DESIGN

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 Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit digital copies of a statement, 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.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. 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 and Owner’s Representative.

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.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect and Owner's Representative will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. "Reviewed": Submittal has been reviewed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Contractor is responsible for compliance with the requirements of the plans and specifications. Review of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for dimensions to be confirmed and correlated at the job site, information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction, coordination of the work of all trades and for performing all work in a safe and satisfactory manner. No comments have been recorded and no resubmittal is required.
2. "Reviewed, Make Corrections Noted, No Resubmittal Required:": Submittal has been reviewed in accordance with the above. When the Contractor has made the corrections noted in the review comments, the submittal will be considered to have the same status as if it had been marked "Reviewed". No resubmittal is required and no action resubmittal shall be made. However, the Contractor, Agency or Architect may request that a record copy be submitted as an Informational Submittal for any of the concerned parties.
3. "Revise and Resubmit": The Contractor shall revise the submittal based on the review comments provided and shall resubmit the entire submittal until a mark of 'Reviewed' or 'Reviewed, Make Corrections Noted, No Resubmittal Required' is obtained.
4. "Rejected": The submittal does not comply with the Contract Documents. Resubmit in conformance with the Contract Documents.
5. "Reviewed, Make Corrections Noted, Resubmit Only Specific Items Indicated": This action will be used in conjunction with either "Make Corrections Noted", as listed above. The item indicated in the submittal review comments shall be resubmitted or submitted - if it is missing in the first place - as a separate resubmittal. All items not specifically indicated to be resubmitted shall be considered as falling under the other action marked and SHALL NOT be resubmitted with the indicated item.

The complete submittal will consist of the original submittal plus subsequent submittals of the specific items indicated that have been submitted and/or resubmitted until they have received a 'Reviewed' or 'Reviewed, Make Corrections Noted, No Resubmittal Required' mark.

6. 'Not Reviewed': Submittal was not required and therefore not reviewed.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 3300

SECTION 01 3325 - DELEGATED DESIGN

1.1 SUMMARY

A. Section Includes: Requirements of Contractor for delegated design work on the Project including professional engineering design and obtaining necessary approvals of regulatory agencies.

B. Components of the Work to which Delegated Design Requirements Apply: As required in individual technical Sections of the Specifications, noted on the Drawings, and where referred to as “Design-Bid-Build.”

C. Deferred Submittals as listed per Plans falls under this Section.

1.2 DEFINITIONS

A. Delegated Design Work: Design services and certifications provided by a professional or engineer in responsible charge registered in California related to systems, materials, and equipment required for the Work to satisfy design and performance criteria established by the Contract Documents. Delegated Design does not include professional services required of the Contractor to fulfill their responsibilities under the Contract including, but not limited to, construction means, methods and sequence.

B. Seal: Certification that delegated design drawings, computations and specifications were designed and prepared under the direct supervision of the architect or engineer in responsible charge and whose name appears thereon.

1.3 CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall be responsible for the design, calculations, California Engineer Stamp (where required), submittals, and permits, for these Delegated design components.

B. The Contractor is responsible to submit all delegated design documents required for approval by regulatory agencies for each delegated design item. The documents shall be submitted to the Design Team for conformance with the contract documents prior to submitting to the AHJ.

C. Each delegated design item requiring review by the governing authorities shall be provided by the Contractor and all fees and costs associated therewith shall be the Contractor’s responsibility except for fees from the City of Santa Ana and/ or unless otherwise mutually agreed upon.

D. Delegated design elements are the responsibility of the contractor. delegated design elements assumed to be designed by the contractor include:

   a. Design of all delegated design elements shall be by a registered California structural or civil engineer.

b. Delegated design element shop drawing and calculation submittals shall be stamped and signed by the contractor's design engineer.

c. Delegated design element calculations shall have a summary page stating the design assumptions including codes and design loads.

d. Delegated design element shop drawings shall show the magnitudes, directions, locations, and connection conditions of all loads imposed on the building structure by the element including, but not limited to:

    1. Fire protection systems, including sprinkler, standpipes, and all supporting system and structures.

    2. Structural engineering, design, and detailing of light gauge and cold-formed framing

    3. Structural support, anchorage, and seismic bracing for equipment and distribution systems: mechanical, electrical, plumbing, telecom equipment, library shelving, kitchen equipment, and other non-structural components that require restraint

    4. Elevator design, upon selection,

    5. Stairs no. 3 & 4

    6. Exterior building maintenance system(s)

    7. Fire alarm and detection system

    8. Exterior envelope, curtain wall and glazing assemblies

    9. Interior chamber enclosure, including wood panel wrap

    10. Custom guardrails, posts and glass engineering

    11. Emergency responder radio communication system, if required as determined by testing

    12. Tensioned fabric panels at council chambers

    13. Acoustical ceiling support and seismic restraint systems, including "clouds" and "baffles"

    14. See also listed delegated structural design elements as noted on sc0.0.1

15. Joint fire stopping & penetration fire stopping as delegated design

16. Structural footings for digital freestanding signage

e. All delegated design elements must be submitted to the construction manager and the architect for review.

f. After construction manager and architect review is complete, all delegated design elements must be submitted to the plan check authority for review and approval.

1.4 COORDINATION

A. The City will not be responsible to pay for costs or damages due to failure by the Contractor to coordinate delegated design work with the work of the Project.

B. The Contractor is responsible to coordinate and submit all material required by governing authorities so review and processing of submittals and permits will not adversely affect the Construction Schedule.

1.5 DESIGN AND PERFORMANCE CRITERIA

A. As required in individual technical Sections of the Specifications.

1.6 SUBMITTALS

A. General:
   1. Procedures: In accordance with Section 01 3300, “Submittal Procedures.”
   2. Review of submittals will be for compliance with design intent and shall neither lessen nor shift the responsibility from the Contractor or its subcontractors to the City or the City’s consultants.
   3. Submittals shall be prepared under the control of the professional or engineer in responsible charge shall bear the professional stamped and signature of the responsible design professional.
   4. Submittals not stamped and signed by the architect or engineer in responsible charge, are incomplete, and submittals that have not been reviewed by the Contractor will be rejected.
   5. Submittals shall include necessary documentation to verify compliance with design and performance requirements including calculations, details, fabrication and assembly information, and shall demonstrate coordination by Contractor with supporting work and other components to be integrated into delegated design assemblies.

B. Delegated Design Summary Sheet: List entities who the Contractor has assigned delegated design responsibilities and the registered engineers' name and contact information.

C. Delegated Design Documents:
   1. Show members, dimensions, connections, materials used. Indicate how the component or assembly is attached to the Building structural system and reactions associated with those connections.
   2. Shop drawings and erection drawings are not acceptable as delegated design drawings. The Contractor may, however, request drawings/backgrounds from the Architect to use in its preparation of shop drawings. If acceptable to the Architect, the Architect will send drawings, via e-mail, only after the following is completed:
      a. Contractor to complete the "CAD Release & Indemnity Agreement" to be provided by Architect; sign and return to the Architect.
      b. Consultants shall make their CAD files available to the Contractor.
   3. Calculations including criteria, design assumptions, substantiating computations and such additional data sufficient to show the correctness of the documentation and compliance with the applicable codes and regulations.

D. Record Documents: Final delegated design documents representing as-built conditions shall be prepared by the Contractor and provided to the City as specified in Section 01 7839, “Project Record Documents.”

1.7 QUALITY ASSURANCE

A. Delegated design submittals shall be approved by regulatory authorities and the Architect prior to starting fabrication of the work regardless of whether a building permit has been previously issued.

B. Where the Contractor is required to provide services of a licensed design professional, comply with the specified design and performance criteria.

C. Except for field quality assurance testing specified to be performed by the City, provide laboratory and field tests to establish performance characteristics of the delegated design work at no additional cost to the City.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3543 – SPECIAL ENVIRONMENTAL 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 REPORT PREPARATION

A. This Hazardous Building Material Survey Report for the Santa Ana Memorial Park Aquatics Center Renovation Project has been prepared by:

Omega Environmental Services, Inc.
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
949.252.2145
https://www.omegaenv.com/
Project No.: 2024-5452COSA
Dated: August 13, 2024

B. This report was obtained by the Owner for use by the Architect in building design and remains the responsibility of the Environmental Consultant.

1.3 RELATED SECTIONS

A. Appendix A.1 – Hazardous Building Material Survey Report.

B. Appendix A.2 – Supplemental Asbestos and Lead Assessment Report.

1.4 DOCUMENT PREPARATION

A. Contractor shall read this document before submission of bid.

B. This document was provided by the Owner for information related to the rules and regulations of the City of Santa Ana and remains the responsibility of the Owner.

1.5 ADDITIONAL INVESTIGATION

A. Contractor may visit the site and acquaint himself with site conditions.

B. Before bidding, Contractor may make his own investigations to satisfy himself with site conditions and the presence of any hazardous materials within the limits of the scope of the Project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION 01 3543

SECTION 01 3591 - PERIOD TREATMENT PROCEDURES (MURAL)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Special procedures for Mural Protection & Reinforcement on Project including, but not limited to, the following:
   1. The work under this item consist of protecting & reinforcing the existing mural in accordance with the Santa Ana Memorial Park Aquatics Center Renovation Project per Appendix H, Standard Specifications, plans, and Contract Documents.

1.3 ACTION SUBMITTALS

A. Historic Treatment Plan: Submit a written plan for each phase or process including protection of historic features and materials. Describe in detail materials, methods, and equipment to be used for each phase of work.

B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of work, provide a written description including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this.

C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by historic treatment operations. Submit before work begins.

D. Record Documents: Include modifications to manufacturer's written instructions and procedures, as documented in the historic treatment preconstruction conference and as the Work progresses.

E. Closeout Submittals: At Substantial Completion submit to Architect electronic files of the photographic documentation. Organize photographs in separate folders and subfolders as needed to properly illustrate the demolition, removal, construction, re-installation of the different historical materials, features and finishes. Provide a description for each photograph indicating the historical feature or material, date, location and construction phase.

1.4 DEFINITIONS

A. "Preservation": To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.

B. "Rehabilitation": To make possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

C. "Restoration": To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.

D. "Reconstruction": To reproduce in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.

E. "Stabilize": To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.

F. "Protect and Maintain": To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

G. "Protect and Maintain": To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

H. "Replace": To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:
   1. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.
   2. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.
   3. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated.

I. "Remove": To detach items from existing construction and legally dispose of them off- site unless indicated to be removed and salvaged or removed and reinstalled.

J. "Remove and Salvage": To detach items from existing construction and deliver them to Owner.

K. "Remove and Reinstall": To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.

L. "Existing to Remain" or "Retain": Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged, or removed and reinstalled.

M. "Material in Kind": Material that matches existing materials, as much as possible, in species, cut, color, grain, and finish.

1.5 COORDINATION

A. Historic Treatment Subschedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.

1. Schedule construction operations in sequence required to obtain best historic treatment results.
2. Coordinate sequence of historic treatment work activities to accommodate the following:
    a. Owner's continuing occupancy of portions of existing building.
    b. Owner's partial occupancy of completed Work.
    c. Other known work in progress.
    d. Tests and inspections.
3. Detail sequence of historic treatment work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of elevator and stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

B. Pedestrian and Vehicular Circulation: Coordinate historic treatment work with circulation patterns within Project building and site. Some work is near circulation patterns. Circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.6 QUALITY ASSURANCE

A. Historic Preservation Specialist Qualifications: A firm that employs personnel, including supervisory personnel, experienced and skilled in the processes and operations indicated.

B. List of projects showing experience of each team member.
   1. For each worker, identify each project by name and location, provide an outline description of the scope of work, dollar value of the contract, date of completion, a reference contract, and a description of worker's responsibility on project.
   2. If, in the opinion of the Historic Architect and the Owner, the worker does not meet requirements for this section, submit alternate workmen providing a full set of quality assurance submittals for that worker for review.

C. Historic Treatment Preconstruction Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
   1. Review Historic Preservation Specialist written instructions for precautions and effects of products and procedures on building materials, components, and vegetation.
      a. Record procedures established as a result of the review and distribute to affected parties.

D. Monitoring.
   1. Historic Preservation Specialist shall monitor the installation and removal of temporary protection.
   2. Historic Treatment Specialist shall perform a post-construction survey to document the condition of the historic resources after project completion.

E. Work shall meet the requirements established by the U.S. Department of the Interior National Park Service publications listed below:
   1. Tech Note Number 2 - Specifying Temporary Protection of Interiors during Construction and Repair.
   2. Standard for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

F. No changes shall be made to project plans during construction without input from the OWNER's Architect.

G. Contractor Qualifications
   1. CONTRACTOR shall possess a minimum of two years demonstrated experience in the renovation of historically significant structures.
   2. CONTRACTOR shall provide a full-time supervisor experienced in the renovation of historically significant buildings.
   3. CONTRACTOR shall provide qualified workers trained and experienced in the preservation, conservation and restoration of historic buildings.

1.7 PROJECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at Project site.
   1. Attendees: In addition to representatives of Owner, Construction Manager, Historic Architect, Architect of Record, and Contractor, testing service representative, historic treatment specialists, chemical-cleaner manufacturer(s), and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.
   2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

      a. Historic Treatment Subschedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Fire-prevention plan.
      c. Governing regulations.
      d. Areas where existing construction is to remain and the required protection.
      e. Hauling routes.
      f. Sequence of historic treatment work operations.
      g. Storage, protection, and accounting for salvaged and specially fabricated items.
      h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
      i. Qualifications of personnel assigned to historic treatment work and assigned duties.
      j. Requirements for extent and quality of work, tolerances, and required clearances.
      k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
      l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.
      m. Scaffolding, approved methods of anchoring.

   3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct specifically for historic treatment work at monthly intervals. Coordination meetings are in addition to specific meetings

held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Construction Manager, Historic Architect, Architect of Record, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.

    a. Historic Treatment Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
    b. Schedule Updating: Revise Contractor's Historic Treatment Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:

        1) Interface requirements of historic treatment work with other Project Work.
        2) Status of submittals for historic treatment work.
        3) Access to historic treatment work.
        4) Effectiveness of fire-prevention plan.
        5) Quality and work standards of historic treatment work.
        6) Change Orders for historic treatment work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.8 PROJECT CONDITIONS

A. Exterior Cleaning and Repairing:

1. Proceed with the work only when forecasted weather conditions are favorable.
   a. Wet Weather: Do not attempt repairs during rainy or foggy weather. Do not apply primer, paint, putty, or epoxy when the relative humidity is above 80 percent. Do not remove exterior elements of structures when rain is forecast or in progress.
   b. Do not perform exterior wet work when the air temperature is below 40 deg F (5 deg C).
   c. Do not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.
2. Perform cleaning and rinsing of the exterior only during daylight hours.

1.9 PROJECT RECORD DOCUMENTS

A. Maintain accurate photographic records using digital camera technology to document the appearance prior to, during and after construction to the extent necessary to provide evidence of compliance to the environmental process.

B. Document existing conditions, demolition, removal, protection, storage, restoration, rehabilitation and other construction activities performed to historic materials, features and finishes throughout the Work. Record date, location and construction activity of each photograph.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to start of Work examine work area and identify the items, features and materials that will be temporarily removed, demolished or need to be protected in place.
   1. Identify items, features and materials that will remain and be protected.
   2. Identify the items, features and materials that will be demolished or temporarily removed.

B. Notify Historic Architect if existing materials that are damaged prior to start work of this Section.

3.2 PROTECTION, GENERAL

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
3. Erect temporary barriers to form and maintain fire-egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.
6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
8. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.

B. Temporary Protection of Historic Materials:
   1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
   2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:
   1. Notify Owner, Architect of Record, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
   2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
   3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

3.3 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT

A. Comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:

1. Obtain owner's approval for operations involving use of open-flame or welding equipment.
    a. Notification shall be given for each occurrence and location of work with heat-generating equipment.
2. As far as practical, use heat-generating equipment in shop areas or outside the building.
3. Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.
4. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
5. Remove and keep the area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.
    a. If combustible material cannot be removed, provide fireproof blankets to cover such materials.
6. Where possible, furnish and use baffles of metal or gypsum board to prevent the spraying of sparks or hot slag into surrounding combustible material.
7. Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
8. Do not use heat for paint removal.
9. Do not use heat for surface operations where there is flammable material hidden below the surface.
10. Inspect each location of the day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.

3.4 PROTECTION FROM FIRE

A. Follow fire-prevention plan and the following:
    1. Comply with NFPA 241 requirements unless otherwise indicated.
    2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
        a. If combustible material cannot be removed, provide fire blankets to cover such materials.
    3. Prohibit smoking by all persons within Project work and staging areas except where specifically designated for smoking.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
    a. Train each fire watch in proper operation of fire-control equipment and alarms.
    b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.
    c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
    1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

3.5 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.6 HISTORIC TREATMENT PROCEDURES

A. The principal aim of preservation work is to halt the process of deterioration and stabilize the item's condition, unless otherwise indicated. Repair is required where specifically indicated. The following procedures shall be followed:
   1. Retain as much existing material as possible; repair and consolidate rather than replace.
   2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
   3. Use reversible processes wherever possible.
   4. Use traditional replacement materials and techniques. New work shall be distinguishable to the trained eye, on close inspection, from old work.
   5. Record the work before the procedure with preconstruction photos and during the work with periodic construction photos. Photographic documentation is specified in division 1 section "construction progress documentation."

B. Obtain Historic Architect's review and written approval in the form of a constructive change directive or supplemental instruction before making changes or additions to construction or removing historic materials.

C. Notify Historic Architect of visible changes in the integrity of material or components whether due to environmental causes including biological attack, uv degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.
   1. Do not proceed with the work in question until directed by Historic Architect.

D. Where work requires existing features to be removed, cleaned, and reused, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

E. Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish them from original materials. Record the legend of identification marks and the locations of these marks on record drawings.

F. When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid over cleaning to prevent damage to existing materials during cleaning.

G. Use the gentlest means and methods available, and wherever possible use reversible processes.

H. Preparation for painting should use the gentlest, least invasive means possible. Remove damaged or deteriorated paint only to the next sound layer of paint using the gentlest method possible. Use compatible paint coating systems.

I. Document treatment process as indicated on article project record documents.

3.7 REMOVAL PROCEDURES

A. Remove and dismantle items on or near historic surfaces exercising caution and in accordance to the historic treatment plan

B. Use dismantling equipment and tools that will not damage the historical surfaces. Protect historic surfaces from contact or damage by tools.

C. Unfasten items that are bolted or screwed, do not use pry bars.

D. Support items as they become loose to prevent stress and damage to historic surfaces. Where needed provide temporary bracing or supports to prevent collapse of materials being removed.

E. Notify Historic Architect of unsound conditions discovered.

F. Document removal process as indicated on article project record documents.

3.8 CLEANUP

A. Clean surfaces using the gentlest methods possible, in order to avoid damaging historic materials.

B. Remove rubbish, debris, and waste materials and legally dispose of off the project site.

END OF SECTION 01 3591

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SECTION 01 4000 - QUALITY 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 SECTION INCLUDES

A. Administrative and procedural requirements for quality assurance and quality control services.

B. Testing and Inspection Service: As required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's quality control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Contractor's quality control.

D. Progress cleaning.

E. Pre-construction conferences.

F. Repair and protection of ongoing construction.

1.3 RELATED SECTIONS

A. Divisions 02 through 35 Sections for specific test and inspection requirements.

1.4 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.

C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.5 DELEGATED DESIGN

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.

1.6 SUBMITTALS

A. Contractor shall submit 21-days after notification of Award, a submittal entitled: Quality Assurance/Quality Control (QA/QC) Plan. This submittal includes, but not limited to, the Contractor means-methods of Management & Supervision oversight procedures. State the Contractor designated personal managing the QA/QC Plan. List all as per the Technical Specifications QA/QC requirements the Contractor will track through construction.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, 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, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Qualification Data: For entities and agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience.
   1. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 INSPECTION AND TESTING AGENCY SUBMITTALS

A. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Description of test and inspection.
   3. Identification of applicable standards.
   4. Identification of test and inspection methods.
   5. Number of tests and inspections required.
   6. Time schedule or time span for tests and inspections.
   7. Entity responsible for performing tests and inspections.
   8. Requirements for obtaining samples.
   9. Unique characteristics of each quality control service.

B. Submit a certified written report of each inspection, test or similar service, to the Architect, in triplicate, unless the Contractor is responsible for the service. If the Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Contractor, in duplicate.
   1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

C. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
   1. Date of issue.
   2. Project title and number.
   3. Name, address and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making the inspection or test.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete inspection or test data.
   9. Test and inspection results and an interpretation of test results.
   10. Ambient conditions at time of sample taking and testing and inspecting.
   11. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
   12. Name and signature of laboratory inspector.
   13. Recommendations on retesting and re-inspecting.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for

this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

F. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
   1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State of California.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E548, and that specializes in types of tests and inspections to be performed.

H. Provide inspection and testing services as required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance, nor are they intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Documents requirements.

1.9 QUALITY CONTROL SERVICES AND RESPONSIBILITIES

A. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities.

B. Owner Responsibilities: Where quality control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

C. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
1. Testing agency will notify Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
2. Testing agency will submit a certified written report of each test, inspection, and similar quality control service to Architect with copy to Contractor and to authorities having jurisdiction.
3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Testing agency will retest and re-inspect corrected work.

D. Contractor Responsibilities: Unless otherwise indicated, provide quality control services specified and required by authorities having jurisdiction.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality control services.
2. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.10 TESTING AND INSPECTION AGENCY SERVICES

A. The Testing Agency should be employed by the Owner. Provide inspections, tests and similar quality control services, except where they are specifically indicated to be the Owner's responsibility. Include costs for these services in the Contract Sum.

B. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Contractor.
4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
5. Do not perform any duties of Contractor.

D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality control services, including retesting and re-inspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
   1. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

1.11 CONTRACTOR'S QUALITY CONTROL

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step, in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.12 PRE-CONSTRUCTION CONFERENCES

A. The General Contractor shall issue an Agenda to the City, Architect and Construction Manager prior to conducting this Preconstruction Meeting. The Agenda shall detail list ALL that is required for discussion QA/QC per the Technical Specifications including but not limited to: RFI's, Submittals, Mock-ups, Schedule, Safety, Field Testing.

B. Convene a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.

C. Attendees: The Owner, Construction Manager, Architect, the Contractor and his superintendent, subcontractors, suppliers, manufacturers, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.

D. Agenda: Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries.

E. Review progress of other activities and preparations for the activity under consideration at each conference, including time schedules, manufacturers' recommendations, weather limitations, substrate acceptability, compatibility problems and inspection and testing requirements.

F. Use conferences to assure accurate coordination among trades where appearance of intersecting materials is critical. Follow agendas laid out in individual Sections.

G. Record significant discussions, agreements and disagreements of each conference, along with the approved schedule. Distribute the meeting record to everyone concerned, promptly, including the Owner and Architect.

H. Do not proceed if the conference cannot be successfully concluded. Initiate necessary actions to resolve impediments and reconvene the conference at the earliest feasible date.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching."

B. Protect construction exposed by or for quality control service activities, and protect repaired construction.

C. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

D. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

3.2 PROGRESS CLEANING

A. Preconstruction Conference: Conduct a meeting at the site prior to commencement of all construction activities to establish required procedures for maintaining a clean site that meets the Owner's requirements. Conference shall be attended by Contractor, Owner, Architect, and Contractor's superintendent.
   1. Review intended progress cleaning procedures and schedule.
   2. Establish intervals required by Owner for progress cleaning to take place and meetings to review effectiveness of progress cleaning.
   3. Establish the need for identification badges for construction and cleaning personnel.
   4. Discuss security procedures required by Owner.
   5. Review reporting procedures for any violations of established and agreed upon procedures.

B. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

C. Site: Maintain Project site free of waste materials and debris.

D. 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.

E. 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.

F. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

G. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

H. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
   1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

I. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

J. 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.

K. 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.

L. 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.
   1. Protect adjacent existing buildings from deleterious effects of ongoing construction operations.

END OF SECTION 01 4000

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SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the 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 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": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

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

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 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.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.

ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	AWCI International (Association of the Wall and Ceiling Industry International)
AWCMA	American Window Covering Manufacturers Association (Now WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CRRC	Cool Roof Rating Council
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute

CSA	Canadian Standards Association
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FIBA	Federation Internationale de Basketball (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FM Approvals	FM Approvals
FM Global	FM Global (Formerly: FMG - FM Global)
FMRC	Factory Mutual Research (Now FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)

IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek Testing Service NA
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MH	Material Handling
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association

	(Formerly: National Oak Flooring Manufacturers Association)
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Now ITS)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute

SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

BOCA	BOCA International, Inc. (See ICC)
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials (See ICC)
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)
ICC	International Code Council
ICC-ES	ICC Evaluation Service, Inc.
SBCCI	Southern Building Code Congress International, Inc. (See ICC)
UBC	Uniform Building Code

(See ICC)

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

CE	Army Corps of Engineers
CPSC	Consumer Product Safety Commission
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDA	Food and Drug Administration
GSA	General Services Administration
HUD	Department of Housing and Urban Development
LBL	Lawrence Berkeley National Laboratory
NCHRP	National Cooperative Highway Research Program
	(See TRB)
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration
PBS	Public Building Service
	(See GSA)
PHS	Office of Public Health and Science
RUS	Rural Utilities Service
	(See USDA)
SD	State Department
TRB	Transportation Research Board
USDA	Department of Agriculture
USPS	Postal Service

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA)

	Architectural Barriers Act (ABA)
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications and Standards
DSCC	Defense Supply Center Columbus
	(See FS)
FED-STD	Federal Standard
	(See FS)
FS	Federal Specification
FTMS	Federal Test Method Standard
	(See FS)
MIL	(See MILSPEC)
MIL-STD	(See MILSPEC)
MILSPEC	Military Specification and Standards
UFAS	Uniform Federal Accessibility Standards

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation
CCR	California Code of Regulations
CPUC	California Public Utilities Commission
	Forest Resource Development

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 4216 - DEFINITIONS

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. Basic Contract definitions are included in the Conditions of the Contract.

B. Acceptable: Contractor is obligated to provide and install one of the named products. Manufacturers with products having equivalent characteristics may be considered provided deviations are minor and design concept expressed in the Contract Documents is not changed, as judged by the Design Professional. A substitution request is necessary for use of any other manufacturer or products other than what is named.

C. Approve, Approved: Where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

D. Accepted Equivalent: Where used in conjunction with the Architect's action on the Contractor's submittals and substitution requests, is as stated in the Conditions of the Contract for Architect's responsibilities and duties as the Design Professional.
   1. Where a specification section identifies 3 possible manufacturers and omits "or equal" or "accepted equivalent" or similar phrase, the specification shall be interpreted to be limited to those three manufacturers only; no substitutions will be accepted.

E. Basis of Design: Where specified these Specifications shall be interpreted to require the named Basis-of-Design product or acceptable comparable product where additional manufacturers are listed. If no other manufacturers are listed, the Specification shall be interpreted to mean 'no known equal'. Substitutions will be handled and processed in accordance with Section 012513 – Product Substitution Procedures.

F. By Contractor, By Sub-Contractor: Where noted, this term shall be used to delineate Scope ordinarily provided by other parties associated with this Contract, to be provided by the Contractor or appropriate Subcontractor for a complete installation. Where indicated, "By Contractor," "By Subcontractor,"

"By System Supplier" or similar term, responsibilities shall include but not be limited to: furnish, install, design, and engineer all components required for a complete installation including those items provided by other parties which are dependent upon the proprietary information specific to a final product selection otherwise not known in an open specification. This shall include an evaluation and verification of impacts to the building, structure, or related system, agency approvals, and permit fees, should they be required.

G. Clash Detection:
   1. Use of a BIM model or other industry-recognized methods to identify potential conflicts prior to the installation or fabrication of various portions of the work and to avoid unnecessary redesign due to inadequate or late identification of potential conflicts.
   2. Identification and avoidance of conflicts in building systems, equipment, material delivery, scheduling, overlapping trades, and other timelines.

H. Coordinate, Coordination: The act of aligning tasks, activities, schedules, and resources so that they are managed effectively; being responsible for redesign where diagrammatic systems conflict.
   1. Use the procedures enumerated in Section 01 31 00 – Project Management and Coordination to conduct coordination meetings to bring together, the contractors, subcontractors, and designers necessary to ensure that tasks and activities can be organized so that they are properly integrated together and managed effectively, and can be constructed without clashes between building components and systems.
   2. Contractor shall be solely responsible for scheduling and coordinating the work of subcontractors, suppliers, and all other individuals or entities performing or furnishing any of the Work for a complete installation.

I. Delegated Design: Shifting of various design responsibilities to the GC, outside of a formal Design-Build Contract, by way of the contract, specifications, or directives of the Owner

J. Delegated Design Entity: Fabricator who assumes full responsibility for engineering, testing, fabrication, permit approval and installation of a portion of the Work.

K. Diagrammatic: Information provided in the Contract Documents for the purpose of expressing the Architect's design intent which the Contractor is to follow to perform the Work.
   1. The Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents.
   2. "Diagrammatic" does not represent all of the individual components potentially required for completion of the Work, but is a representation of the general location, scope, and points of connection requirements.

L. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Architect, requested by the Architect, and similar phrases.

M. Experienced: When used with the term Installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.

N. Furnish: Means supply and deliver to the Project site, ready for unloading, unpacking, storage, protection, assembly, installation, and similar operations.

O. Indicated: Refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as shown, noted, scheduled, and specified are used, it is to help the reader locate the reference.

P. Install: Describes operations at Project site including the actual unloading, unpacking, assembly, erection, coordination with other trades, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

Q. Installer: An Installer is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier for performance of a particular construction activity, including installation, coordination, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

R. 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. Comparable Product: Product that is demonstrated and approved through submittal 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.

S. Project Site: Is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

T. Provide: Means to furnish and install, complete and ready for the intended use.

U. Regulations: Includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

V. System: Where noted, this shall include any component for which the sole purpose is to facilitate the installation, support, or functionality of the associated items ordinarily provided by others and where otherwise not noted. All items required for a system shall be provided by the Contractor.

W. Testing Laboratories: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SUBMITTALS

A. It shall be understood that the various submittals required by the individual specification sections are to be first reviewed by the contractor for completeness and accuracy, and then submitted to the Architect for review and approval as specified in the General Conditions.

B. Unless "no substitution" or similar language is used to specify a unit or portion of the Work, these Specifications shall be interpreted to include the words "or approved equal" after every product specified by manufacturer's brand name or model number. Substitutions will be handled and processed in accordance with Section 01 2513 – Product Substitution Procedures.

1.4 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. Overlapping and Conflicting Requirements: Where compliance with 2 or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes 2 different or conflicting minimums or levels of quality, the most stringent requirement (which is generally recognized to be also the most costly is intended and will be enforced, unless specifically detailed language written into the contract documents (not by way of reference to an industry standard) clearly indicates that the less stringent requirement is to be fulfilled.
   1. Refer apparently equal-but-different requirements, and uncertainties as to which of 2 levels of quality is the more stringent, to the Owner for a decision before proceeding.
   1. Contractor's Option: Except for overlapping or conflicting requirements, where more than one set of requirements are specified for a particular unit of work, the option is intended to be the Contractors' regardless of whether specifically indicated as such in the text.
   2. See also Section 01 1100 – Summary of Work for additional requirements and procedures to follow where conflicting information is encountered.

1.5 GOVERNING DICTIONARY

A. The definitions of the words used in these Specifications, which are not defined in the Section, the General Conditions, or in referenced standards, are as given in "Webster's Third New International Dictionary", The Definitive Merriam-Webster Unabridged Dictionary of the English Language.

1.6 ABBREVIATIONS AND NAMES

A. Where acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

B. Trades; Names: Except as otherwise indicated, the use of trade titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesman or the corresponding generic name (such as a carpenter), nor that the specified requirements apply exclusively to work by tradesmen of that corresponding generic name.

1.7 SPECIFICATION FORMAT AND LANGUAGE

A. These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 50-Division format and MASTERFORMAT 2021 numbering system.

B. Language used in the Specifications and other Contract Documents is abbreviated. Words that are implied, but not stated shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.

C. Imperative language is used generally. Requirements expressed in the imperative mood are to be performed by the Contractor. The indicative mood is employed on occasion when such sentence structure is necessary to convey the intended meaning in a more accurate or understandable format. (The imperative and indicative moods of sentence structure are defined in CSI's Manual of Practice.)

D. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

E. Streamlining: Employs the colon as a symbol for the words "shall be", "shall have", "shall conform with", "shall meet the requirements of", or "shall comply with".

F. A colon is also used to set off a paragraph title or heading from the text that follows. This is the case when a grammatically complete sentence follows a heading and a colon. It is also used as a punctuation mark in a sentence to direct attention to matter that follows. This is not streamlining. A colon also represents the phrase “Shall be”.

1.8 INTERPRETATIONS

A. In order to reduce the length of these Specifications, certain phrases are written without objects and shall be interpreted as described below.

B. As indicated: Whenever "as indicated" is specified in these Specifications, it shall be understood to read "as indicated on the Drawings".

C. As required: Whenever "as required" is specified in these Specifications, it shall be understood to read "as required for a complete and finished installation" or "as required for a complete and finished, operable installation".

D. As specified: Whenever "as specified" is specified in these Specifications, it shall be understood to read "as specified herein" or "as specified in these Specifications".

1.9 STANDARD OF QUALITY

A. Where one certain kind, type, brand or manufacturer of material is named in these Specifications, it shall be regarded as the required minimum standard of quality. Submit requested substitutions in accordance with Section 01 2513.

1.10 PERMITS, LICENSES, AND CERTIFICATES

A. For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 4216

SECTION 01 4339 – MOCK-UPS

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 SECTION INCLUDES

A. Mock-up requirements.

1.3 RELATED SECTIONS

A. Divisions 02 through 35 Sections for specific mock-up requirements.

1.4 DEFINITIONS

A. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Accepted mockups establish the standard by which the Work will be judged. See Drawings for extent of mockup required.

1.5 PRECONSTRUCTION TESTING

A. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
   1. Contractor responsibilities include the following:
      a. Provide test mockups representative of proposed products and construction.
      b. Submit test mockups in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
      c. Provide sizes and configurations of test mockups to adequately demonstrate capability of products to comply with performance requirements.
      d. Build site-assembled test mockups when required in individual specification Sections, using installers who will perform same tasks for Project.
      e. When testing is complete, remove test mockups; do not reuse products on Project.

1.6 QUALITY ASSURANCE

A. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
   1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect or Owner's Representative.
   2. Notify Architect and Owner's Representative seven days in advance of dates and times when mockups will be constructed.
   3. Demonstrate the proposed range of aesthetic effects and workmanship.

B. Obtain Architect's and Owner's Representative's approval of mockups before starting work, fabrication, or construction.

C. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

D. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

E. Demolish and remove mockups when directed, unless otherwise indicated.

F. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect and Owner's Representative.

1.7 MOCKUP SCHEDULE

A. Mockups: a demonstration of construction of Building Assemblies.
   1. Mockup shall include all specified finishes, underlayments and waterproofing membranes and flashing for field water spray testing and field finish installation approvals. No work represented on mockup shall proceed before approval of mockup by Architect.
   2. Provide for water testing of exterior mockup by Owner's testing agency.
   3. If Architect determines mockups do not comply with requirements, reconstruct mockups until mockups are approved.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 4339

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SECTION 01 5000 - 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 SECTION INCLUDES

A. Temporary utilities.

B. Temporary telecommunications services.

C. Temporary sanitary facilities.

D. Temporary Controls: Barriers, enclosures, and fencing.

E. Security requirements.

F. Vehicular access and parking.

G. Waste removal facilities and services.

H. Field offices.

1.3 RELATED REQUIREMENTS

A. Section 01 5813 - Temporary Project Signage.

1.4 TEMPORARY UTILITIES

A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.5 TELECOMMUNICATIONS SERVICES

A. Provide equipment and connections for Contractor’s and Engineer’s field office.

B. Telecommunications services shall include:
   1. Windows 7 or Windows 10 based personal computers dedicated to Project telecommunications, with necessary software.

2. Color laser printer and fax/copier/scanner with minimum 25 pages per minute color print speed.
3. Telephone Land Lines: two lines, minimum; one handset per line.
4. Internet Connection: High speed data connection adequate to serve Project needs.

1.6 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures.

B. Provide at time of Project mobilization.

C. Provide sanitary facilities within each office trailer where office trailer is provided.

D. Maintain daily in clean and sanitary condition.

E. At end of construction, return facilities to same or better condition as originally found.

1.7 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to Workers or the public and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
1. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
2. Provide protection for landscape plantings designated to remain. Replace damaged plants.
3. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
4. Traffic Controls: As needed per local authorities.

1.8 FENCING

A. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.9 EXTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior openings to accommodate acceptable Working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 SECURITY

A. Provide security and facilities to protect Work and City's operations from unauthorized entry, vandalism, or theft.

1.11 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Engineer.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.12 WASTE REMOVAL

A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.

B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

C. Provide containers with lids. Remove trash from site weekly.

D. If materials to be recycled or re-used on the Project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.13 PROJECT TEMPORARY SIGNS - SEE SECTION 01 5813

1.14 FACILITIES FOR AGENCY PERSONNEL

A. Contractor shall furnish and maintain throughout the duration of the project a minimum “Class A” 12’W x 60’L Field Office (prefabricated or mobile unit with serviceable finishes by Willscot or equal). This office shall have a minimum floor space of 600 SF, all weather flooring surface, integrated restroom facilities, Heating and cooling capacity, two (2) exterior doors and multiple windows of not less than a combined total of 60 SF. Windows shall be provided with security screens and window coverings (blinds). The Field Office shall have a minimum of two (2) separate rooms, and a private restroom

within the trailer for the use of the occupants only, with an adjoining conference area in the middle. Keep the office clean and orderly. Furnish and equip offices as follows:

a. Office related Furniture and equipment shall be provided as follows and be in new or near new condition upon arrival; two (2) standard 1.5m (5 feet) long double pedestal desk with a drawer suitable for holding files, one (1) ergonomic desk chair (La-z-boy Wickingham or equal), one (1) 6' tall adjustable 5-shelf bookcase, one (1) 36" x 48" Wall mounted Dry-Erase Boards four, four (4) 6' long white folding tables, two (2) 4' long white folding table with adjustable height, and twelve (12) folding chairs.
b. Electric power shall be provided to include 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height. An outdoor photocell sensor light fixture with a 300-watt bulb shall be installed.
c. Provide a dedicated high-speed Internet connection capable of 100 Mbps with wireless router for secure Wi-Fi connection. Include IT support for network / Internet / printer /wireless setup and service as required. Mobile (Cellular) hotspot is unacceptable and will only be considered after all possible solutions have been identified and detailed by the Contractor. Approval of mobile hotspot will require a minimum of (2) hotspots under different accounts. Must be reviewed and approved by Construction Manager prior to acceptance.
d. Provide a Provide a multi-function laser color printer /copier/fax/scanner capable of printing 50 ppm color/55 B&W and ability to print on letter (8½"x11"), legal (8½"x14") and ledger (11"x17") size paper. Copy Resolution 1200 x 2400 dpi. Connectivity – Wireless Ethernet 802.11b. Provide paper, toner/ink and maintenance/service.
e. Provide two (2) 27-inch computer monitors with native resolution of 1920 x 1080 and HDMI inputs.
f. Large 65" diagonal minimum wall flat screen with tele-conferencing camera and microphone for use by City or its representative during construction meetings. Must be able to access hi-speed internet connection and capable of wireless pairing with MS Window and/Google Chrome based machines. Provide a mobile TV stand / rolling TV cart for the 65" TV.
g. The Contractor shall provide bottled drinking water service and drinking water supplies such as disposable cups and a refrigerator w/ separate Freezer door with minimum 4.4 cu ft capacity.
h. Integral Sanitary facilities including a toilet and wash basin with hot and cold running water. Facility may need the use of a water tank (including pumps, water lines, electric water heater, etc.) and sewage holding tanks as required to achieve and maintain a fully operating sanitary facility.

Toilet room supplies including toilet paper, toilet seat covers, and a trash can with disposable liners.

i. Provide weekly cleaning services for field office, trailer and on-site toilet facilities, including trash collection, and cleaning of associated furnishings and equipment.

j. Field office and support equipment shall remain on-site for the duration of the project (excluding maintenance period). Field office may need to be relocated, at contractor's expense, during the course of construction in order to facilitate final construction activities. This shall be detailed in Construction Staging plan for approval and be part of the cost to maintain the trailer on-site.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary Work.

C. Restore existing facilities used during construction to original condition.

D. Restore new permanent facilities used during construction to specified condition.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION01 500

SECTION 01 5050

MOBILIZATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Mobilization consists of preparatory work including, but not limited to, work necessary for the mobilizing and furnishing at the site, equipment, materials, supplies and incidentals; for the establishment of all offices, buildings and other temporary facilities necessary for work on the project; cost for pre-paid bonds and insurances; and for all other work and operations which must be performed or costs incurred to begin work on the various Bid Items at the project site. Compensation for mobilization includes, but is not limited to, the following principal items:

1. Moving onto the site of all Contractor's equipment required for operations.
2. Installing temporary construction power and wiring.
3. Developing and installing construction water supply.
4. Providing all on-site communication facilities, including telephones.
5. Providing on-site sanitary facilities and potable water facilities.
6. Arranging for and erection of Contractor's work and storage yard(s).
7. Obtaining and paying for all required bonds and insurances including the bond required by Article 2.4 of the Public Works Code.
8. Posting all OSHA-required notices and establishing safety programs.
9. Having the Contractor's superintendent at the job site full time, whenever construction is in progress.
10. Submitting preconstruction submittals, including:

    (a) Construction Schedule as specified in Section 01 3216 Construction Progress

B. Contractor is alerted to the condition that the maximum amount to be listed for Mobilization in the Contractor prepared Schedule of Values shall not exceed five percent (5%) of the various line items sub-total, excluding the Mobilization item itself.

1.2 RELATED SECTIONS

A. Division 0 – General Requirements and Supplemental General Provisions

B. Section 01330 – Submittal Procedures

C. Section 01500 - Temporary Facilities and Controls

1.3 PAYMENT

A. The line Item amount in the Schedule of Values for “Mobilization” will be paid over the course of the project based on percent completion of the work.

% Mobilization Payment	%Project Completion
50%	2%
70%	5%
90%	10%
100%	20%

B. Any extension of the contract time that may be granted will not of itself constitute grounds for a claim for additional payment under the Bid Item “Mobilization.”

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 5639 – TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction or on adjacent properties.

1.2 DEFINITIONS

A. 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.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

C. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

D. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

E. 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. Contractor shall take pictures at the ground level of the trunk and of the entire tree(s) from 4 angles and provide these to the City prior to the work taking place on site.

1.4 QUALITY ASSURANCE

A. Arborist Qualifications: Certified Arborist as certified by ISA, licensed arborist in jurisdiction where Project is located, current member of ASCA, or registered Consulting Arborist as designated by ASCA.

B. Pre-installation Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

A. 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.

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. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other nonsoil materials.

B. Topsoil: Stockpiled topsoil from location shown on Drawings.

C. Organic Mulch: Ground or shredded bark, free from deleterious materials.

D. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used only when approved by Architect.
1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and supported by tubular or T-shape galvanized-steel posts spaced not more than 8 feet apart. High-visibility orange color, nonfading.
2. Height of Fencing: 5 feet.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

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.

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. Protection Zones: Mulch areas inside protection zones and other areas indicated with 3-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.2 PROTECTION ZONES

A. Not used.

3.3 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 "Earth Moving."

B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots 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.

C. Do not allow exposed roots to dry out before placing permanent backfill.

3.4 ROOT PRUNING

A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:
   1. Prune tree roots under the observation of a qualified arborist.
   2. 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.
   3. Temporarily support and protect roots from damage until they are permanently covered with soil.
   4. Cover exposed roots with burlap and water regularly.
   5. Backfill as soon as possible according to requirements in Division 31 "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune roots by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.5 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:
   1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
   2. Pruning Standards: Prune trees according to ANSI A300 (Part 1) and the following:
   3. Cut branches with sharp pruning instruments; do not break or chop.
   4. Do not apply pruning paint to wounds.
   5. Prune crowns of trees to remain under the observation of a qualified arborist.

B. Chip removed branches and dispose of off-site.

3.6 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. 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.

C. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.7 FIELD QUALITY CONTROL

A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.8 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
   1. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
   2. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
   3. Perform repairs within 24 hours.

4. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 01 5700

TRAFFIC CONTROL SYSTEM

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This Section sets forth the minimum requirements for traffic routing and traffic control under Contract Documents.

B. The Contractor (having C-10 license issued by the State of California Contractors State License Board) may perform the traffic routing work utilizing his/her own forces, or may engage a subcontractor to perform the traffic routing work. If the Contractor intends to engage a subcontractor to perform this work, the subcontractor must possess a C-31 Construction Zone Traffic Control license issued by the State of California Contractors State License Board, and said subcontractor shall be listed on the list of Subcontractors to be submitted as part of the sealed bid.

C. If the Contractor does not have a proper license (Contractor's Type C-10 license), he shall have C-31 Construction Zone Traffic Control License issued by the State of California, Contractors Licensing Board to perform any Traffic Routing Work or shall engage a subcontractor who has C-31 license issued by the State of California to perform Traffic Routing work, and said subcontractor shall be listed on the list of Subcontractors to be submitted as part of the sealed bid.

D. The Contractor shall provide for the protection of the traveling public, pedestrians, bicyclists, and workers within the area covered by the limits of construction, at all times when the area is affected by his/her construction facilities or activities. The Contractor attention is directed to Section 7-1.09, "Public Safety", of the Caltrans Standard Specifications (2018 Edition). Nothing in these Special Provisions shall be construed as relieving the Contractor from his responsibility as provided in said Section 7-1.09.

E. Contractor shall sequence and execute the work so as to minimize the impacts on public right-of-way. Pedestrian travel along project boundaries shall be maintained/allowed at all-times unless due to the nature of the work it is not possible. Work that will impact pedestrian and or vehicular travel shall be coordinated with City of Santa Ana Construction Coordination Committee (CCC) and approved prior to commencing work.

F. The Contractor shall so conduct his/her operations as to cause the least possible obstruction and inconvenience to the public and area residents, and shall have under construction no greater length or amount of work, than set forth in the specifications, and that he can prosecute properly with due regard to the rights of the public and area residents. The Contractor attention is directed to Section 7-

1.08, “Public Convenience”, of the Caltrans Standard Specifications (2018 Edition).

1. For work impacting vehicular travel, Contractor shall factor the following work hours:

    1) Impacts to Flower Street: 9:00 am – 3:00 pm or a permanent traffic control plan (depending on impact), Monday through Friday.

        a) Contractor shall obtain approval from Caltrans. Most restrictive hours shall take precedent.

G. The Contractor shall furnish, install, relocate to provide for lane shifting, remove, store, maintain (including covering and uncovering as required), move to new locations, replace when damaged or missing and dispose of all traffic signs and traffic control devices and features necessary for safety and convenience of the general public and area residents, and for safeguarding the workers and the work, where, and as required by conditions at the site of the work, and in addition to the requirements specified herein, including but not limited to the following:

1. Traffic signs and parking prohibition signs

2. Barricades with flashers

3. Delineators

4. High level warning devices

5. Solar-powered flashing arrow signs

6. Pedestrian barricades

7. Temporary striping and reflective markers, overlay markers, for both construction and interim re-alignments of traffic lanes, cross-walks prior to final striping

8. Providing certified flag persons

9. Responding to requests and complaints from local merchants and residents regarding traffic related complaints.

The Contractor attention is directed to Section 12, “Construction Area Traffic Control Devices”, of the Caltrans Standard Specifications (2018 Edition) and the latest edition of the California Manual on Uniform Traffic Control Devices.

H. The Contractor shall provide traffic lanes and routing of vehicular and pedestrian traffic, as specified herein, in a manner that will be safe and will minimize traffic congestion and delays during construction.

1.2 APPLICABLE STANDARDS

A. In addition to compliance with this specification, the Contractor shall comply with all applicable requirements of the latest editions of the following:

1. *California Vehicle Code.*

2. Other Applicable Government Regulations.

3. Section 2, "Traffic Control," of the City of Santa Ana *Standard Specifications.*

4. Section 12, "Traffic Control," of the *Caltrans Standard Specifications (2018 Edition)*, Department of Transportation, State of California (Caltrans Standard Specifications) except as modified herein.

5. *California Manual of Uniform Traffic Control Devices*, Department of Transportation, State of California.

6. *Manual of Traffic Controls for Construction and Maintenance Work Zones*, Department of Transportation, State of California.

7. *Work Area Traffic Control Handbook*, BNI Books.

1.3 SUBMITTALS

The Contractor shall make the following submittals and get them approved by the authority having jurisdiction (AHJ) before starting any work in the streets:

- Traffic Control and Pedestrian Access Plans
- Storage and Parking Plan
- Schedule of Construction
- Resume and Certification of two Flag Persons
- Truck Routes

1.3.1 Traffic Control and Pedestrian Access Plans

A. Revised traffic control and pedestrian access plans shall be required for any deviation from the approved traffic control and pedestrian access plans as furnished by the Contractor and must be approved by the AHJ. A separate set of traffic control and pedestrian access plans shall be required for working and non-working hours. The plans shall include an affidavit signed by the licensed

engineer who prepared them attesting that he/she has personal knowledge of the traffic conditions in the work areas, understands the impacts the work will have on vehicular, pedestrian, and other modes of transportation, and that the traffic plans comply fully with all ADA requirements and all City of Santa Ana requirements related to providing path of travel through construction zones.

B. Complete traffic control, pedestrian access, and detour plans shall be submitted within 15 calendar days following Notice To Proceed. The Contractor shall allow twenty-one (21) calendar days for the Local Agency to review and approve the traffic control plans. A submittal shall consist of one (1) reproducible vellum of each drawing. Maximum drawing size shall be 36" X 24". The traffic control plans shall be drawn to a scale of 1 inch = 50 feet. The Contractor shall submit the plans to the Local Agency Traffic Engineer, through the AHJ for approval. No work shall be allowed on the streets without the approved traffic control plans. The Contractor shall use the existing striping plans as a base to prepare the traffic control plans.

C. Submit construction plans/specs and traffic control and pedestrian access plans with the City of Santa Ana Encroachment Permit Applications. Allow at least 2 weeks for review and processing. Fees from the City of Santa Ana will not be waived.

1. Contractor shall be responsible for submitting and obtaining approval from Caltrans for any State Right-of-Way encroachment. Contractor shall be responsible for fees associated with corresponding encroachment permit.

D. Each traffic control and pedestrian access plan shall show the following minimum applicable information, as required by the AHJ:

1. Street and traffic lane layout (width of sidewalk, street and lanes etc.); outline of the work under construction (i.e., limits of excavation), location of construction barricades, location of trench protection devices, location of major construction equipment and the ingress and egress routes of trucks hauling materials to and from the construction site.

2. Sequence of construction and traffic lane transitions.

3. Crosswalk and sidewalk closures.

4. Existing striping, pavement markings and traffic signs, and description of what is to be removed prior to installation of temporary striping and signage, and what will be restored after the construction is completed.

5. Location and spacing of "Tow-Away No Stopping" signs.

6. Location and description of temporary striping, pavement markings, signs, and other traffic control devices necessary to provide and maintain the

adequate number and width of traffic lanes specified herein, and to provide and maintain passage and protection for pedestrians.

7. Location and description of traffic control devices proposed for the protection of the work area, excavation, etc.

8. Other proposed changes and provisions for removal, relocation, or temporary installation of:

    (a) Traffic signs

    (b) Transit stops

    (c) Barricades

    (d) Solar operated flashing arrow signs

    (e) Traffic Signals

9. The Contractor shall make their own arrangements to find a location for their office/trailer(s). The Local Agency will not provide a location. The trailer(s) shall be located away from intersections in order not to block traffic control devices (STOP signs, signals etc.), hydrants, bus stops, or driveways.

10. Location of detour signs for vehicular, truck, and pedestrian traffic.

11. Truck Routes: Contractor shall submit truck routes for the approval of the AHJ.

1.3.2 Storage and Parking Plans

The Contractor shall submit plans for materials storage and equipment parking, for each area of the work, along with the traffic control plans.

Storage, stockpiling or placement shall not in any way obstruct any lane or passageway intended for vehicular or pedestrian traffic.

Storage, stockpiling, or placement of any equipment, materials or supplies within the area of any public street or alley, including the sidewalks thereof, will only be allowed when previously approved by the AHJ on the storage and parking plans.

Previous approvals notwithstanding, if the AHJ determines that such storage, stockpiling or placement is causing a violation of the foregoing or of any law or order of any regulatory body having jurisdiction, the Contractor shall cease or modify the storage, stockpiling or placement as

necessary to comply with the specifications, laws, and orders. No additional compensation will be provided for such modifications to the Contractors storage and stockpiling.

1.3.3 Not Used

1.3.4 Resume and Certification of Two Flag Persons

The flag persons shall have a minimum experience of one year of manual Traffic Controls on similar construction projects. The flag persons shall have passed “The Flagger Training Course” offered by the National Safety Council Western Regional Office, 303 Twin Dolphin Drive, Suite 520, Redwood City, CA 94065, (800) 848-5588 or from some other reputable institution. The flag persons must have valid certification. The Contractor shall submit the resume of at least two flag persons to the AHJ for review and approval.

1.3.5 Truck Routes

The Contractor shall submit plans for truck haul routes, for each area of the work, along with the traffic control plans. Truck haul routes shall be approved by the AHJ and shall comply with all local ordinances for each jurisdiction along the proposed truck routes.

PART 2 - PRODUCTS

2.1 GENERAL

A. All traffic signs, barricades, delineators, flashing arrow signs and other traffic control devices shall conform to the requirements of the “Manual of Traffic Controls for Construction and Maintenance Work Zones”, published by the State of California, Department of Transportation, and to the requirements of the Caltrans Standard Specifications (2018 Edition), except as specified herein.

B. All special construction traffic signs shall be reflectorized with black messages/symbols having 6” (15 cm) and 8” (20 cm) high series D letters on orange colored aluminum plate. The message and size of the letters shall be determined by the AHJ through the Traffic Engineer. Any changes on any signs shall be made with appropriate decals.

C. All barricades shall have flashers. The flashers shall be maintained in good operating condition at all times by the Contractor.

D. Temporary Asphalt, Temporary Wood Ramp, 4-foot wide minimum walking surface with running slope not to exceed eight (8) percent.

E. Barricade materials: Delineators, A-Frames, Barrier Caution Tape, Fencing Material

F. Any equipment that does not operate properly or any device that is not in good operating condition shall be removed from the job site immediately at the Contractor's expense.

2.2 DELINEATORS

Delineators for lane taper areas for the separation of traffic from other work, shall be either reflectorized traffic cones minimum 28 inches (71 cm) high, or reflectorized portable tubular delineators minimum 36 inches (91 cm) high, with orange posts and yellow/white reflectors. Reflector units shall be 3"x 12" (8 cm x 30 cm) minimum.

2.3 PLATING

Metal plating and any metal bridging shall be coated with a non-skid and rust-inhibitive product. Plating shall be installed and maintained in such a manner as to provide a non-skid surface with no edges or corners sticking up, and with no bouncing or shifting under traffic loading/impacts.

PART 3 - EXECUTION

3.1 VEHICULAR AND PEDESTRIAN TRAFFIC

A. Traffic Control System for Lane Closure

A traffic control system shall consist of closing traffic lanes and ramps in accordance with the details shown on State Standard Plans T-11, T-12 and T-14, the provisions of Section 12, "Construction Area Traffic Control Devices," of the Caltrans Standard Specifications (2018 Edition), and the provisions of this Section.

The provisions in this section will not relieve the Contractor from the responsibility to provide additional devices or take measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Caltrans Standard Specifications (2018 Edition).

Each vehicle used to place, maintain and remove components of a traffic control system on multilane roads shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with a Type II flashing arrow sign not involved in placing, maintaining, or removing the components when operated within a stationary type lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion.

If any component in the traffic control system, including signal detection and fiber optics, is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the component to its original condition or replace the component, and shall restore the component to its appropriate location. The traffic system shall be restored within 48 hours

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavations adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, approved by the AHJ.

The Contractor shall provide lanes, as tabulated below, to satisfactorily accommodate vehicular traffic. Vehicular/ pedestrian access to properties along the project site shall be maintained at all times. Bicycle lanes shall be maintained by the Contractor at all times during construction. Appropriate warning signs designed for bicyclists shall be used by the Contractor, as necessary, so bicyclists can safely traverse the construction zone.

B. Maintaining Pedestrian Access

The Contractor shall provide a continuous, accessible and safe path of travel around or through construction work zones for pedestrians. The Contractor shall use temporary asphalt or wood ramps, signs, cones, barricades, flashers, and flaggers to direct and channel pedestrians during construction. Advance warning shall be provided to pedestrians of the present sidewalk construction site. Means for temporary access for pedestrians with disabilities, such as temporary ramps, boardwalks, hand railings, etc., shall be in compliance with applicable Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Americans with Disabilities Act (ADA) regulations.

Placement:

Temporary ramps shall be constructed so installation and removal will not damage existing pavement, curb, or gutter.

Ramps shall have a minimum 4-foot wide walking surface and a running slope not to exceed 8 percent.

Ramps shall meet existing surfaces without gaps. When required for drainage, a Schedule 40 PVC pipe minimum 2-inch diameter shall be installed under or through the ramp in gutter or flow line.

Transitions between ramps and the street or sidewalk surfaces shall be smooth.

Sides of the ramp shall be protected with hand railings where drop-offs exceed 6 inches.

Maintenance of a Clear and Accessible Pedestrian Corridor:

The Contractor shall maintain an accessible corridor that provides at least one safe path of travel for all pedestrians at all times for the duration of the project. Conversely, if a safe path of travel is not available, the Contractor shall post the sidewalk as being closed. Signage shall be placed at the location of closure as well as the next intersection in both directions.

Installation of Barricades:

Barricades, which will provide protection for pedestrians from traffic or construction operations, shall be installed in the following locations:

Between the pedestrian access route and any adjacent construction site

Between the alternate circulation path and any adjacent construction site

Between the alternate circulation path and the vehicular way, if the alternate circulation path is diverted into the street

Between the alternate circulation path and any protruding objects, drop-offs, or other hazards to pedestrians

At the down curb ramp of an intersection, if opposite up curb ramp is temporarily or completely blocked, and no adjacent alternative circulation path is provided.

Surfacing of Pedestrian Corridors:

During construction, tripping hazards and barriers for people with mobility impairments must be removed to maintain an accessible pedestrian corridor.

Identification of Safe Path of Travel:

If alternate circulation routes are provided for pedestrians to bypass the construction site, the route shall be clearly defined and advance warning shall be provided to clearly delineate the alternate circulation route. Any change of level in a path of travel that is over ¼ inch (1/2” maximum) height must be beveled a 45 degrees to provide a smooth, non- tripping transition. The City of Santa Ana Traffic Engineers shall review and

approve any pedestrian access limitations and notification requirements for pedestrians with mobility or vision impairments.

Public Convenience and Safety:

All trenches shall be backfilled at the end of the day or temporary covers shall be maintained during non-working hours to avoid any safety issues for pedestrians walking on the project areas.

The Contractor shall contact the property Owners 72-hours prior to any disruption to driveway. Closure of driveways or access to private property shall be minimized.

The Contractor shall make all arrangements with the property Owner for the use of private land for detours and for any other purpose and shall make the City and Cities free from any liability incurred through the use or non-use of such private property.

Warning Signs:

The Contractor shall provide warning signs for temporary ramps and barricades. Warning signs shall be located at both the near side and the far side of the intersection preceding a temporarily completely blocked pedestrian way.

Restoration of Pedestrian Routes:

After construction, the site shall be restored to its former condition, or new condition as required. Restoration of sidewalk areas shall be completed within 5 calendar days following demolition of existing sidewalks and pedestrian pathways. Sidewalk closures in excess of 5 calendar days will be subject to liquidated damages.

Full compensation for providing, installing, removing and maintaining devices for “Maintaining Pedestrian Access” shall be considered as included in the contract lump sum price paid for “Traffic Control System” and no separate payment will be allowed therefore.

3.2 SPECIAL INSTRUCTIONS

A. The Contractor shall comply with all traffic control requirements as specified in the encroachment permit for each Local Agency.

3.3 NO PARKING SIGNS

A. The Contractor will furnish and post "No Parking" signs, as necessary, not less than 72 hours in advance of scheduled work that will restrict parking. If the work

is not performed during the timeframe indicated on the “No Parking” signs, the work will be rescheduled with at least ten (10) working days advance notice. The Contractor shall leave the streets open to traffic until just prior to starting the work, and will provide all barricades, signs and traffic control necessary to protect the work. The Contractor will perform all re-posting of “No Parking” signs and re-notification occasioned by his failure to meet the posted schedule.

B. “No Parking” signs shall indicate time, day, and date and the statement "Violators will be Towed at Owner's Expense - CVC 22651. For info on Towed Vehicles call (Contractor to coordinate with Santa Ana Police Department for appropriate contact phone number for towed vehicles)"

C. The Contractor shall furnish and place the sign, spaced every 50 feet, as approved by the AHJ. The Contractor shall maintain the signs on a continual basis and shall replace damaged or missing signs daily, and shall remove the signs immediately after they are no longer needed.

3.4 TEMPORARY CONSTRUCTION AND TRAFFIC SIGNS

A. The Contractor shall be familiar with the latest edition of California Department of Transportation’s “Manual of Traffic Controls for Construction and Maintenance Work Zones”, and the Special Provisions of the Contract.

B. The Contractor, before starting any work which will affect the normal flow of traffic, shall furnish, install where and as necessary, or directed, and maintain, temporary signs, mounted on barricades or other suitable supports.

C. The Contractor shall, as a minimum, furnish and make available to the site the following signs and equipment in sufficient quantities to maintain required traffic routing:

1. Barricades, as required by Section 21,400 of the State of California Vehicle Code and as specified in the State of California's Department of Transportation “Manual of Traffic Controls, for Construction and Maintenance Work Zones", dated 1990, in a sufficient amount to safeguard the public and the work.

2. "NO PARKING" signs as herein specified.

3. Traffic cones and delineators and temporary reflectorized removable tape of 3M Series 5710 (white), Series 5711 (yellow) or equal, to delineate traffic lanes as required to guide and separate traffic movements, as directed by the AHJ.

4. High level warning flag units, in advance of traffic approaching the work, each displaying three (3) flags mounted at a height of 8 feet (2.4 m).

5. Additional signs as required by the AHJ.

   The actual number and type of signs to be placed shall be as shown on the approved traffic control and pedestrian access plans or as directed by the AHJ.

   All the signs and temporary striping shall be reflectorized. All signs shall be installed so that the bottom of the sign is at least 7 feet (2.1 m) above the sidewalk or pavement, or as directed by the AHJ.

D. The signs and equipment shall conform to the requirements of the latest edition of the "California Manual on Uniform Traffic Control Devices" and to applicable local agency Noise Ordinances.

3.5 TRAFFIC CONTROL

A. TRAFFIC COORDINATION WITH OTHERS

1. The Contractor, in order to maintain a continuous flow of traffic, shall coordinate the traffic routing work with sub-contractors and other contractors, working in the same adjacent area. This includes truck traffic hauling materials, equipment and etc.

2. All proposed traffic routing changes shall be subject to approval of the Traffic Engineer through the AHJ.

3. The Contractor is also required to coordinate this work with other projects occurring within or adjacent to the limits of work.

B. TRAFFIC CONTROL FLAG PERSONS

1. Flaggers, flagging procedures (signaling), flagger stations and flagger control, shall conform to Section 5-07, of the Caltrans "Manual of Traffic Controls for Construction and Maintenance Work Zones", 1990.

2. The Contractor shall ensure that flaggers are trained in the proper fundamentals of flagging traffic before being assigned as flaggers.

3. The flaggers shall be used in each situation where the Contractor's equipment or vehicles back up into a travel lane, or occupy intermittently a traffic lane, or enter from the work area into a traffic lane, or where required for traffic control, as directed by the AHJ.

3.6 MAINTENANCE OF TRAFFIC

A. The Contractor shall cause the least possible interference with traffic. Obstruction or closure of any roadway to vehicular or pedestrian traffic will not be permitted, except in the immediate vicinity of the work.

B. Those parts of public streets, ways and sidewalks that are occupied by the Contractor shall be immediately vacated and returned to public use when the use thereof is no longer necessary for the prosecution of the work.

C. The Contractor, except as hereinafter provided, shall not impede, at any time, free access for vehicles and pedestrians to warehouses, stores, service stations, dwellings, garages and other properties in the vicinity of the work and on adjacent streets, including those properties fronting on streets allowed or stipulated by the Specifications to be closed to through vehicular traffic. Such local access shall be maintained by phasing operations, bridging, or employing other procedures approved by the AHJ.

D. The Contractor shall obtain written permission of each affected property or business City, or responsible building or business manager, for any proposed period of prohibition or impediment of such access. Prohibition or impediment of access to any building or property, for which the AHJ does not have a copy of the specified signed permission, will not be allowed.

E. Access to fire hydrants, to assure their immediate and unhampered use at all times, shall not be impaired by the Contractor. No debris, materials or equipment shall be placed within 10 feet of any fire hydrant.

3.7 DIVERTING OF VEHICULAR TRAFFIC

A. When closing one or more lanes to vehicular traffic or to otherwise divert such traffic from its normal paths, the Contractor shall clearly delineate temporary centerlines separating two-way traffic, and dividing lines for other temporary traffic lanes, by employing cones, barricades, flags, reflectors, or other approved methods or devices.

B. Placing of devices shall commence sufficiently in advance of the obstruction or other cause of the diverting of traffic to minimize congestion and shall enable traffic to enter, traverse and leave the site of the work without abrupt or unwarranted changes in direction. Unless otherwise specified or approved, each temporary traffic lane shall be not less than 10 feet clear width.

C. When a detour is necessary for full or partial roadway closure, all detour signs needed for the required traffic routing must be in place before the roadway can be closed for construction. Failure to comply with this requirement shall result in liquidated damages associated with improper lane closure.

D. High rise warning flag units, each displaying three flags mounted at the height of 8 feet, to provide advance warning for traffic approaching the work, will be required in all cases where motorists' visibility of the work is limited or obscured.

3.8 RELOCATION AND REMOVAL OF EXISTING PERMANENT TRAFFIC CONTROL AND SIGNS

A. The Contractor shall be familiar with all existing permanent traffic signs and other traffic control devices within the project limits.

B. The Contractor shall temporarily relocate all traffic control, street name, and other Local Agency signs, as required for the prosecution of the work and to prevent interference with traffic signal installations, and shall satisfactorily maintain such signs in place at all times. The standards for such signs shall be similarly relocated, or removed and salvaged as Local Agency property. The Contractor shall salvage standards in their entirety, and shall remove any concrete therefrom.

C. The temporary relocation of each arterial traffic regulatory sign shall be done immediately upon its removal, and to a location as close as possible to the original position of such sign, or where directed by the AHJ.

D. The Contractor shall permanently relocate traffic control and other signs and standards to the locations shown, as directed in the plans. Signs to be removed and salvaged are to be delivered by the Contractor to the Corp Yard of the Local Agency,

E. At least 5 working days prior to the time the Contractor's work will be done to the point that permanent installation of the signs temporarily relocated can be inspected, the AHJ shall be notified.

F. If additional materials (sign, pole, frame, mounting equipment, etc.) and adjustments are identified as needed during the inspection, the associated cost shall be borne by the Contractor for an additional cost to be included in a contract change order.

END OF SECTION

SECTION 01 5713 - TEMPORARY EROSION AND SEDIMENT CONTROL

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 SECTION INCLUDES

A. Prevention of erosion due to construction activities.

B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

C. Restoration of areas eroded due to insufficient preventive measures.

D. Compensation of City for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.3 RELATED REQUIREMENTS

A. Section 01 5723 - Storm Water Pollution Prevention

B. Section 03 3000 - Cast-in-Place Concrete: Concrete for temporary and permanent erosion control structures indicated on drawings.

C. Section 31 1000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.

D. Section 31 2200 - Grading: Temporary and permanent grade changes for erosion control.

E. Section 32 1123 - Aggregate Base Courses: Temporary and permanent roadways.

1.4 REFERENCE STANDARDS

A. ASTM D4355 - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus; 2007.

B. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity; 1999a (Reapproved 2014).

C. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 2011.

D. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 2008.

E. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile; 2012.

F. ASTM D4873 - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples; 2002 (Reapproved 2009).

G. California State Water Resources Control Board, Construction General Permit; current edition.

H. California Stormwater Quality Association (CASQA), California Stormwater Best Management Practice (BMP) Handbook; current edition.

I. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit; current edition.

J. USDA TR-55 - Urban Hydrology for Small Watersheds; USDA Natural Resources Conservation Service; 2009.

1.5 PERFORMANCE REQUIREMENTS

A. Comply with all requirements of the State Water Resource Control Board (SWRCB) Construction General Permit (CGP) for erosion and sedimentation control.

B. Best Management Practices Standard: CASQA Stormwater BMP Handbook.

C. Do not begin clearing, grading, or other Work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
   1. City will obtain permits and pay for securities required by authority having jurisdiction.
   2. City will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.

D. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

E. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this Project.
   1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.

F. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on Project site due to construction activities for these Project.
   1. Control movement of sediment and soil from temporary stockpiles of soil.
   2. Prevent development of ruts due to equipment and vehicular traffic.
   3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to City.

G. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the Project site due to construction activities for the Project.
   1. Prevent windblown soil from leaving the Project site.
   2. Prevent tracking of mud onto public roads outside site.
   3. Prevent mud and sediment from flowing onto sidewalks and pavements.
   4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to City.

H. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the Project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
   1. If sedimentation occurs, install or correct preventive measures immediately at no cost to City; remove deposited sediments; comply with requirements of authorities having jurisdiction.
   2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.

I. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the Project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
   1. If sedimentation occurs, install or correct preventive measures immediately at no cost to City; remove deposited sediments; comply with requirements of authorities having jurisdiction.

J. Open Water: Prevent standing water that could become stagnant.

K. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

L. Comply with Section 01 5723 - Storm Water Pollution Prevention.

1.6 SUBMITTALS

A. See Section 01 3300 – Submittal Procedures, for submittal procedures.

B. Prepare Storm Water Pollution Prevention Plan (SWPPP) in conformance with Section 01 7420 - Stormwater Pollution Control.

PART 2 - PRODUCTS

A. MATERIALS

B. Mulch: Use one of the following:
   1. Straw or hay.
   2. Erosion control matting or netting.
   3. Polyethylene film, where specifically indicated only.

C. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.

D. Bales: Air dry, rectangular straw bales.

E. Bale Stakes: One of the following, minimum 3 feet (1 m) long:
   1. Steel U- or T-section, with minimum mass of 1.33 lb per linear foot (1.98 kg per linear m).
   2. Wood, 2 by 2 inches (50 by 50 mm) in cross section.

F. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
   1. Average Opening Size: 30 U.S. Std. Sieve (0.600 mm), maximum, when tested in accordance with ASTM D4751.
   2. Permittivity: 0.05 sec^-1, minimum, when tested in accordance with ASTM D4491.
   3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355 after 500 hours exposure.
   4. Tensile Strength: 100 lb-f (450 N), minimum, in cross-machine direction; 124 lb-f (550 N), minimum, in machine direction; when tested in accordance with ASTM D4632.
   5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632.
   6. Tear Strength: 55 lb-f (245 N), minimum, when tested in accordance with ASTM D4533.
   7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.

G. Silt Fence Posts: One of the following, minimum 5 feet (1500 mm) long:

H. Steel U- or T-section, with minimum mass of 1.33 lb per linear foot (1.98 kg per linear m).

I. Concrete: See Section 03 3000 - Concrete.

J. Comply with Section 01 7420 - Stormwater Pollution Control.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 7420 - Stormwater Pollution Control.

3.2 PREPARATION

A. Section 01 7420 - Stormwater Pollution Control.

3.3 MAINTENANCE

A. Section 01 7420 - Stormwater Pollution Control.

3.4 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Engineer.

B. Clean out temporary sediment control structures that are to remain as permanent measures.

C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION 01 5713

SECTION 01 5721 - INDOOR AIR QUALITY 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 SECTION INCLUDES

A. Construction procedures to promote adequate indoor air quality after construction.

B. Building flush-out after construction and before occupancy.

C. Testing indoor air quality after completion of construction.

1.3 PROJECT GOALS

A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
   1. Cleaning of ductwork is not contemplated under this Contract.
   2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.

B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
   1. Furnish products meeting the specifications.
   2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.4 REFERENCE STANDARDS

A. ASHRAE Std 129 - Measuring Air-Change Effectiveness; 1997 (Reaffirmed 2002).

B. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2009.

C. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.

D. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; April 1990.

E. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; January 1999.

F. SMACNA (OCC) - IAQ Guideline for Occupied Buildings under Construction; 2007.

1.5 DEFINITIONS

A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.

B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.

C. Particulates: Dust, dirt, and other airborne solid matter.

D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.6 SUBMITTALS

A. See Section 01 3300 – Submittal Procedures, for submittal procedures.

B. Indoor Air Quality Management Plan: Describe in detail measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
1. Submit not less than 60 days before enclosure of building.
2. Identify potential sources of odor and dust.
3. Identify construction activities likely to produce odor or dust.
4. Identify areas of Project potentially affected, especially occupied areas.
5. Evaluate potential problems by severity and describe methods of control.
6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
7. Describe cleaning and dust control procedures.

C. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.

D. Duct and Terminal Unit Inspection Report.

E. Air Contaminant Test Plan: Identify:
1. Testing agency qualifications.
2. Locations and scheduling of air sampling.
3. Test procedures, in detail.
4. Test instruments and apparatus.
5. Sampling methods.

F. Air Contaminant Test Reports: Show:
   1. Location where each sample was taken, and time.
   2. Test values for each air sample; average the values of each set of 3.
   3. HVAC operating conditions.
   4. Certification of test equipment calibration.
   5. Other conditions or discrepancies that might have influenced results.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 CONSTRUCTION PROCEDURES

A. Prevent the absorption of moisture and humidity by adsorptive materials by:
   1. Sequencing the delivery of such materials so that they are not present in the building until wet Work is completed and dry.
   2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
   3. Provide sufficient ventilation for drying within reasonable time frame.

B. Begin construction ventilation when building is substantially enclosed.

C. Do not store construction materials or waste in mechanical or electrical rooms.

D. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
   1. Inspect duct intakes, return air grilles, and terminal units for dust.
   2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
   3. Clean tops of doors and frames.
   4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
   5. Clean return plenums of air handling units.
   6. Remove intake filters last, after cleaning is complete.

E. Do not perform dusty or dirty Work after starting use of return air ducts without intake filters.

F. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

3.2 BUILDING FLUSH-OUT

A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.

B. Perform building flush-out before occupancy.

C. Do not start flush-out until:
   1. All construction is complete.
   2. HVAC systems have been tested, adjusted, and balanced for proper operation.
   3. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
   4. New HVAC filtration media have been installed.

D. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of three air changes of building volume has been supplied.
   1. Obtain City's concurrence that construction is complete enough before beginning flush-out.
   2. Maintain interior temperature of at least 60 degrees F (15 degrees C) and interior relative humidity no higher than 60 percent.
   3. If additional construction involving materials that produce particulates or any of the specified contaminants is conducted during flush-out, start flush-out over.
   4. If interior spaces must be occupied prior to completion of the flush-out, supply a minimum of 25 percent of the total air volume prior to occupancy, and:
      a. Begin ventilation at least three hours prior to daily occupancy.
      b. Continue ventilation during all occupied periods.
      c. Provide minimum outside air volume of 0.30 cfm per square foot (0.0015 cu m/s/sq m) or design minimum outside air rate, whichever is greater.

E. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

3.3 AIR CONTAMINANT TESTING

A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.

B. Perform air contaminant testing before occupancy.

C. Do not start air contaminant testing until:
   1. All construction is complete, including interior finishes.
   2. HVAC systems have been tested, adjusted, and balanced for proper operation.
   3. New HVAC filtration media have been installed.

D. Indoor Air Samples: Collect from spaces representative of occupied areas:

1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet (2300 square meters); take samples from areas having the least ventilation and those having the greatest presumed source strength.
3. Collect samples from height from 36 inches (915 mm) to 72 inches (1830 mm) above floor.
4. Collect samples from same locations on 3 consecutive days during normal business hours; average the results of each set of 3 samples.
5. Exception: Areas with normal very high outside air ventilation rates, such as laboratories, do not need to be tested.
6. When retesting the same building areas, take samples from at least the same locations as in first test.

E. Outdoor Air Samples: Collect samples at outside air intake of each air handler at the same time as indoor samples are taken.

F. Analyze air samples and submit report.

G. Air Contaminant Concentration Limits:
1. Formaldehyde: Not more than 27 parts per billion.
2. PM10 Particulates: Not more than 50 micrograms per cubic meter.
3. Total Volatile Organic Compounds (TVOCs): Not more than 500 micrograms per cubic meter.
4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: Allowable concentrations listed in Table 4-1.
5. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.

H. Air Contaminant Concentration Test Methods:
1. Formaldehyde: ASTM D5197, EPA 625 Method TO-11A, or EPA 600 Method IP-6.
2. Particulates: EPA 600 Method IP-10.
3. Total Volatile Organic Compounds (TVOC): EPA 625 Method TO-1, TO-15, or TO-17; or EPA 600 Method IP-1.
4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: ASTM D5197, or EPA 625 Method TO-1, TO-15, or TO-17.
5. Carbon Monoxide: EPA 600 Method IP-3, plus measure outdoor air; measure in ppm; report both indoor and outdoor measurements.

END OF SECTION 01 5721

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SECTION 01 5813 – TEMPORARY PROJECT SIGNAGE

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 SECTION INCLUDES

A. Project identification sign.

B. Project informational signs.

C. See Section 01 0100 CITY OF SANTA ANA, graphic format in APPENDIX E.

1.3 QUALITY ASSURANCE

A. Design sign and structure to withstand 50 miles/hr (80 km/hr) wind velocity.

B. Sign Painter: Experienced as a professional sign painter for minimum three years.

C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.4 SUBMITTALS

A. Shop Drawing: Project identification signage graphic layout provided by City in electronic media format. Contractor shall provide Project informational signage graphic layout.

PART 2 - PRODUCTS

2.1 SIGN MATERIALS

A. Structure and Framing: New, wood, structurally adequate.

B. Sign Surfaces: Exterior grade plywood, minimum 3/4 inch (19 mm) thick, with adhered PVC or similar material 1/4-inch-thick overlay sheet, standard large sizes to minimize joints.

C. Rough Hardware: Galvanized.

D. Paint and Primers: Exterior quality, two coats; sign background of white color.

E. Lettering: Pre-cut vinyl self-adhesive products, colors as indicated on drawings..

F. Logo or Symbols: Pre-cut vinyl self-adhesive products, colors as indicated on drawings. Electronic file will be provided by Architect in AutoCAD.

2.2 PROJECT IDENTIFICATION SIGN

A. Provide one (1) printed sign of construction, design, and content as provided by City. Location to be determined by Architect.

B. Graphic Design, Colors, Style of Lettering: Designated by Architect. City will provide final signage design in PDF format.

2.3 PROJECT INFORMATIONAL SIGNS

A. Provide at each field office, storage shed, and directional signs to direct traffic into and within site. Relocate as Work progress requires.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install Project identification sign within 20 calendar days after Notice to Proceed.

B. Erect at location of high public visibility adjacent to main entrance to site as approved by City.

C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.

D. Install sign surface plumb and level, with butt joints. Anchor securely.

E. Paint exposed surfaces of sign, supports, and framing.

3.2 MAINTENANCE

A. Maintain signs and supports clean, repair deterioration and damage.

3.3 REMOVAL

A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

END OF SECTION 01 5813

SECTION 01 6000 – 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 SECTION INCLUDES

A. This Section describes basic requirements governing material and equipment including but not limited to:
   1. Products.
   2. Fabrication and installation.
   3. Manufacturers' instructions.
   4. Product delivery, storage, handling, and protection.

1.3 RELATED REQUIREMENTS

A. Section 01 2513 – Product Substitution Procedures.

B. Section 01 3300 – Submittal Procedures.

C. Section 01 4216 – Definitions.

1.4 DEFINITIONS

A. Products: Items purchased 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, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, 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: Where specified these Specifications shall be interpreted to require the named Basis-of-Design product or acceptable comparable product where additional manufacturers are listed.
   1. The first listed manufacturer is to be considered the 'Basis-of-Design' whether stated or not. Any additional manufacturers are to be considered substitutions, subject to the procedures and provisions of Section 01 2513
   2. If no other manufacturers are listed, the Specification shall be interpreted to mean 'no known equal'. Substitutions will be handled and processed in accordance with Section 01 2513.

1.5 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products and associated product being submitted. Include generic names of products required and specification paragraph reference. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Completed List: Within 60 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   3. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: See Section 01 2513.
   1. 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.
   2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request within **10 business days** of receipt of request, or **5 business days** of receipt of additional information or documentation, whichever is later.
      a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
      b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.6 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
   1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
   2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. 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 ensure compliance with the Contract Documents and to ensure 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. Store cementitious products and materials on elevated platforms.
   5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.8 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: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final 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 appropriate form properly executed.
   3. Refer to Divisions 2 through 26 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that 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. Owner 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. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or accepted equivalent," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Comply with specifications and referenced standards as minimum requirements.

C. Provide new materials, except as specifically allowed by the Contract Documents.

D. Comply with industry standards except when more stringent tolerances are required. Perform work by persons qualified to produce fabricate, and install materials of specified quality.

E. Components required to be supplied in quantity within a specification section shall be the same and shall be interchangeable.

F. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
4. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.

5. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
6. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product 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:
    1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
    2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.
6. Make requires for comparable products under provisions of Section 01 2513.

2.3 FABRICATION AND INSTALLATION

A. Comply with industry standards except when more restrictive tolerances or requirements indicate more rigid standards or precise fabrication and installation.

B. Perform work by persons qualified to fabricate and install materials and products of specified quality.

C. Secure products in-place plumb, level and true to line, in correct relation with adjacent material and with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

2.4 MANUFACTURERS' INSTRUCTIONS

A. When work is specified to comply with manufacturers' instructions, distribute copies to persons involved, and maintain one set in field office.

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 6000

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SECTION 01 6116 – VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

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 RELATED SECTIONS

A. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.3 DEFINITIONS

A. Interior of Building: Anywhere inside the exterior weather barrier.

1.4 REFERENCE STANDARDS

A. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.

B. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Carpet and Rug Institute; Current Edition.

1.5 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the Project, submit evidence of compliance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All Products: Comply with the most stringent of Federal, State, and local requirements, or these specifications.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. City reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to City.

B. All additional costs to restore indoor air quality due to installation of non-compliant products shall be borne by Contractor.

END OF SECTION 01 6161

SECTION 01 7300 – EXECUTION 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 SECTION INCLUDES

A. Verification of property lines and bench mark.

B. Verification of existing utility elevations.

C. Layout of building and other site features.

D. Field engineering.

E. General installation of products.

F. Coordination of Owner-installed products.

G. Progress cleaning.

H. Starting and adjusting.

I. Protection of installed construction.

J. Correction of the Work.

1.3 RELATED SECTIONS

A. Section 01 7700 – Closeout Procedures: Final cleaning.

1.4 SUBMITTALS

A. Qualification Data: For land surveyor and professional engineer.

B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL

A. Furnish all materials, labor, transportation and equipment necessary to complete this portion of the Contract.

B. Reset bench mark, if required.

C. Verify the inverts or flow lines of all existing utility structures adjacent to the site or to be connected to, including but not limited to stubs, drainage channels, laterals, catch basins, junction boxes, manholes and gutters.

3.2 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
   1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Owner's Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Owner's Representative before proceeding.
   2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.3 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.
   4. Maintain minimum headroom clearance of 8 feet (2.4 m) in spaces without a suspended ceiling.

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. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. 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.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   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.

H. 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.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
   1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
   2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

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: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

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.

3.6 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.7 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. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
   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 7300

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SECTION 01 7329 - CUTTING AND PATCHING

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 SECTION INCLUDES

A. Requirements and limitations for cutting and patching of Work.

B. Contractor shall be responsible for cutting, fitting and patching required to complete the following work:
   1. Make its parts fit together properly.
   2. Uncover work to provide for installation of ill-timed work.
   3. Remove and replace defective work.
   4. Remove and replace work not conforming to Contract Documents.
   5. Remove samples of installed work as required for testing.
   6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit. In-fill and patch openings left by removal of piping, conduit, etc.

C. Coordinate unanticipated cutting and demolition with the Architect prior to executing work.

D. Provide special care to protect the areas of the building to be retained. Match surrounding materials and finishes. All new concrete shall match the texture, degree of smoothness and corner conditions of existing adjacent concrete.

E. Contractor shall be responsible for patching of existing walls and ceilings to a reasonably smooth condition. This may require the removal and cutting of existing ceiling framing, hangers and brackets and patching of the remaining indents and holes.
   1. Contractor shall be responsible for cutting, fitting and patching required to complete Work.
   2. Coordinate unanticipated cutting and demolition with the Contracting Officer prior to execution of the work.
   3. Provide special care to protect the historic fabric of the buildings scheduled to be retained. Match surrounding materials and finishes.

1.3 RELATED SECTIONS

A. Section 01 1100 - Summary of Work: Work by Owner or by separate contractors.

B. Section 01 2513 – Product Substitution Procedures.

C. Section 01 3300 – Submittals Procedures.

D. Individual Product Specification Sections:
   1. Cutting and patching incidental to work of the Section.
   2. Advance notification to other Sections of openings required in work of those Sections.
   3. Limitations on cutting structural and other types of members.

1.4 SUBMITTALS

A. Shop Drawings: Submit prior to cutting of any structurally or visually significant portion of the Work which is not specifically shown on the Drawings. Obtain written permission for exact location and size of openings from the Architect.
   1. Before cutting into any portion of the structure, obtain written permission from the Architect for each hole to be cut or enlarged. Submit shop drawings indicating exact location and size of detail of reinforcement of such openings.

B. Submit written request in advance of cutting or alteration which affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather-exposed or moisture-resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate contractor.

C. Include in request:
   1. Identification of Project.
   2. Location and description of affected work.
   3. Necessity for cutting or alteration.
   4. Description of proposed work, and products to be used.
   5. Alternatives to cutting and patching.
   6. Effect on work of Owner or separate contractor.
   7. Written permission of affected separate contractor.
   8. Date and time work will be executed.

1.5 QUALITY ASSURANCE

A. Standards: For seismic restraints of mechanical systems comply with SMACNA Manual unless more stringent requirements are indicated in Division 23.

1.6 WARRANTY

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Primary Products: Identical to those required for original installation.
   1. For exposed surfaces, use materials that virtually match existing adjacent surfaces to fullest extent possible if identical materials are unavailable or cannot be used.
   2. Use materials whose installed performance will equal or surpass that of existing materials.

B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01 2513.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing work, inspect conditions affecting performance of work.

C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instruction.

D. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

B. Provide protection from elements for areas which may be exposed by uncovering work.

C. Maintain excavations free of water.

D. Avoid cutting existing pipes, conduit, or ductwork serving building but scheduled to be removed or relocated until provisions have been made to bypass them.

E. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at earliest feasible time and complete.
   1. Cut existing construction to provide for installation of other components or performance of other construction activities and subsequent fitting and patching required to restore surfaces to original condition.

3.3 PERFORMANCE

A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

B. When warranty may be affected by alterations to original installation of weather exposed and moisture resistant elements, and sight-exposed surfaces, employ original installer to perform cutting and patching.

C. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior approval.

D. Restore work with new products in accordance with requirements of Contract Documents.

E. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

F. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

3.4 CUTTING AND PATCHING

A. General: Execute cutting, fitting, and patching including excavation and fill to complete work.
   1. Fit products together, to integrate with other work.
   2. Uncover work to install ill-timed work.
   3. Remove and replace defective or non-conforming work.
   4. Remove samples of installed work for testing when requested.
   5. Provide openings in the work for penetration of mechanical and electrical work.

B. Cutting:
   1. Perform cutting, associated structural reinforcing, and patching in a manner to prevent damage to other Work, and to provide proper surfaces for the installation of new materials, equipment and repairs. Adjust and fit products to provide a neat installation.

2. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior written approval.

C. Gypsum Board and Plaster: At the Contractor's option, on existing walls and ceilings designated for cutting and patching work, the Contractor may use any of the following methods, or combination thereof, to match adjacent wall plane and finish, and as required to meet the required fire ratings:
   1. Patch gypsum board walls or ceilings with new gypsum board the same thickness as existing surface.
   2. Patch plaster walls or ceilings using plaster to match and align with the adjacent surface thickness.
   3. Remove entire gypsum board or plaster surface plane and replace with new gypsum board to the corner of the wall or ceiling plane.

D. At partitions and ceilings indicated as "existing to remain", provide modification of finishes for new Work including, but not necessarily limited to, acoustical treatment, electrical, plumbing, etc. See Drawings for extent of work.
   1. At Contractor's option, where modifications are required, finishes may be cut and patched, or removed and replaced on one or both sides.

E. Patching:
   1. Patch surfaces to match adjacent surfaces. Finish to nearest intersection. For an assembly, refinish entire unit.
   2. Patch to achieve security; strength; weather protection, as applicable; efficiency, operational life, maintenance, and safety of operational elements; and to preserve continuity of existing fire ratings.
   3. Patch surfaces to successfully duplicate undisturbed adjacent profiles, materials, textures, finishes and colors. Use materials which match existing construction.
   4. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the Architect's decision will be final.
   5. Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
   6. At penetrations of fire-rated walls, partitions, ceilings, and floor construction completely seal voids with fire-rated material in accordance with Section 07 8400, and U.L. specifications to full thickness of the penetrated element.

3.5 FINISHING

A. Finish or refinish, as applicable, cut and patched surfaces to match adjacent finishes. Replace materials which are damaged or abused and cannot be neatly repaired as a result of cutting and patching operations.

B. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
   1. For continuous surfaces, refinish to nearest intersection or natural break.
   2. For an assembly, refinish entire unit.

C. Painting: Paint over complete surface planes, unless otherwise indicated or directed. Over patched wall and ceiling surfaces, paint to nearest cutoff line for entire surface, such as the intersection with adjacent wall or ceiling, beam, or to nearest opening frame, unless otherwise indicated or directed. Painted surfaces shall not appear spotty or touched-up.

END OF SECTION 01 7329

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SECTION 01 7419 - 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 Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Administrative and procedural requirements for the following:
   1. Salvaging non-hazardous demolition and construction waste.
   2. Recycling non-hazardous demolition and construction waste.
   3. Environmental protection.
   4. Disposing of non-hazardous demolition and construction waste.

1.3 WASTE MANAGEMENT GOALS FOR THE PROJECT

A. The Owner has established that this Project shall minimize the creation of construction and demolition waste on the job site. Contributing factors include over-packaging, ordering error, poor planning, improper storage, breakage, mishandling, and contamination. Recycle as many of the waste materials as economically feasible. Minimize waste sent to landfills.

B. Diversion Goals: A minimum of 75% of total project waste shall be diverted from landfill. The following waste categories, at a minimum, shall be diverted from landfill through recycling or salvage:
   1. Clean dimensional wood, pallet wood
   2. Plywood, OSB, and particleboard
   3. Concrete
   4. Cardboard, paper, packaging
   5. Metals
   6. Gypsum drywall (unpainted)
   7. Paint
   8. Glass
   9. Plastics
   10. Carpet and pad
   11. Beverage containers

C. Salvage may include donations of materials to charitable organizations.

1.4 PERFORMANCE GOALS

A. Use sustainable or renewable materials.
   1. Select Forest Stewardship Council (FSC) certified wood products for framing, flooring, finishes, furnishings and temporary construction applications such as bracing, concrete formwork and pedestrian barriers.
   2. Select rapidly renewable materials that sustainably replenish themselves in a less than 10-year cycle (e.g. linoleum: cork and linseed).
   3. Select materials that minimize damage to natural habitats.

B. Use resources efficiently.
   1. Reuse existing building materials from demolished buildings where possible.
   2. Select materials that use resources efficiently.
   3. Use construction practices that achieve the most efficient use of resources and materials.
   4. Recycle minimum 75% (by weight) of construction, demolition and land-clearing debris.
   5. Select recycled content materials (target is 20% of building materials that contain in aggregate a minimum average the post-consumer recycled content and 50% post industrial recycled content).
   6. Select materials that can be recycled at the end of their useful life (e.g. metal products, carpet).

C. Use durable materials.
   1. Select materials with the longest usable life.
   2. Select materials with the least burdensome maintenance requirements.

1.5 SUBMITTALS

A. Waste Management Plan: Within 1 week of contract award, the Contractor shall submit to the Owner a Waste Management Plan. The Plan shall contain the following:
   1. Designation of the party who will implement the plan
   2. Analysis of the estimated job-site waste to be generated, including types and quantities
   3. Proposed Alternatives to Landfilling: a list of each material planned to be salvaged or recycled during the course of the Project and the proposed destination of each material

B. Progress Reports: Submit bi-monthly, a Waste Management Progress Report. The report shall contain the following information:
   1. Project title, name of company completing report, and dates of period covered by the report
   2. Amount (in tons or cubic yards) of material landfilled from the Project and identity of the landfill

3. For each material recycled or salvaged from the Project, provide the following:
   a. Amount (in tons or cubic yards)
   b. Date(s) removed from the job site
   c. Receiving party
   d. Cost: Bin rental, hauling, and facility fees
   e. What was done with the material
4. Include legible copies of on-site logs, manifests, weight tickets, and receipts. Manifests shall be from recycling and/or disposal site operators who can legally accept the materials for the purpose of reuse, recycling, or disposal.

C. Project Completion Report:
   1. Submit a letter at project close out tabulating the total waste material, quantities diverted and the means by which diverted, and declaring that the waste management goal has been met. Calculations may be done by weight or volume, but must be consistent throughout.

1.6 PROJECT MEETINGS

A. Waste management plans and implementation shall be discussed at the following meetings:
   1. Pre-bid meeting
   2. Pre-construction meeting
   3. Regular job-site meetings

1.7 QUALIFIED CONSTRUCTION WASTE RECYCLING SERVICES

A. Construction waste shall be delivered to appropriate, qualified recycling services

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Coordinate waste materials handling and separation for all trades, and document results of the Waste Management Plan.

B. Provide separation, handling, transportation, recycling, salvage, and landfilling for all demolition and waste materials.

C. Designate a specific area for separation of material for salvage and recycling. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination or mixing materials.

D. Maintain an on-site log, which includes for each load of materials removed from site: type of material, load volume and/or weight, recycling/hauling service, date accepted by recycling service or landfill, and facility fee.

E. Do not handle, separate, store, salvage, or recycle hazardous materials with other materials. Follow material-specific instructions any hazardous materials. Contact Project Manager if no instructions are evident.

F. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
   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.

G. 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.

3.2 ENVIRONMENTAL PROTECTION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.

C. Dewatering Facilities and Drains: Comply with requirements in applicable Division 2 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. 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 property nor endanger permanent Work or temporary facilities.

2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.

D. Tree and Plant Protection, General: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.

E. Protect landscape work adjacent to or within work areas as follows:
1. Provide barriers to protect tree trunks.
2. Bind spreading shrubs.
3. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.
4. Set scaffolding and ladder legs away from plants.

3.3 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

C. Collection and Disposal of Waste: Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner.

D. Burning: Do not burn waste materials.

E. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 7419

SECTION 01 7420 – STORMWATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 PERFORMANCE

A. Minimum Water Quality Protection Requirements

1. The Contractor is required to meet the following minimum standards of good housekeeping.

   a. Eroded sediments and other pollutants must be retained on site and may not be transported from the site via sheetflow, swales, area drains, natural drainage, or wind.
   b. Stockpiles of earth and other construction-related materials must be protected from being transported from the site by wind or water.
   c. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of in a proper manner. Spills may not be washed into the drainage system.
   d. Excess or waste concrete may not be washed into the public way or any drainage systems. Provisions shall be made to retain concrete wastes on-site until they can be appropriately disposed of or recycled.
   e. Trash and construction-related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.
   f. Sediments and other materials may not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public ways. Accidental dispositions must be swept up immediately and ay not be washed down by rain or by any other means.

B. Wet Weather Erosion Control Plan (WWECP)

1. The Contractor shall prepare a Wet Weather Erosion Control Plan (WWECP) and implement Best Management Practices (BMPs) necessary.

C. Stormwater Pollution Prevention Plan

1. The Contractor shall prepare applicable sections and comply with The Stormwater Pollution Prevention Plan (SWPPP). The Contractor shall complete and submit the Notice of Intent to construct under the California Construction General Permit (NPDES). The Contractor shall implement Best Management Practices (BMPs) necessary to control stormwater pollution from sediments, erosion, and construction materials leaving the construction site.

2. The BMPs contained in the Development Best Management Practices Handbook – Part A, Construction Activities cover the following categories of construction activities:
   a. Site preparation/earth removal
   b. Underground structures
   c. Aboveground structures
   d. Roadways, walkways, and parking lots
   e. Planting and landscaping

3. The SWPPP document shall include the following information:
   a. The name, location, period of construction, and a brief description of the Project.
   b. Contact information for the Contractor, including name, address, and telephone number.
   c. Name, location, and description of any environmentally sensitive areas located on or the adjoining the Project.
   d. A list of major construction materials, waste and activities.
   e. A list of BMPs to be used to control pollutant discharges from major construction materials, wastes, and activities.
   f. A site plan (a construction plan may be used) indicating the location of BMPs where appropriate.
   g. A developer's certification statement that all required and selected BMPs will be effectively implemented.

4. Whenever the Contractor is required to get any type of permit from the Department of Building and Safety (DBAS), the Contractor shall submit the SWPPP document to the DBAS for review and approval before obtaining the permit. If the Contractor does not need any type of permit from the DBAS, the Contractor shall submit the SWPPP document to the Project Manager for review and approval. At least one copy of the approved SWPPP shall be kept at the construction site and accessible to City inspectors.

END OF SECTION 01 7420

SECTION 01 7700 – 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 SECTION INCLUDES

A. Procedures for substantial and final completion.

B. Inspection and final acceptance.

C. Record document submittals.

D. Final cleaning.

1.3 SUBSTANTIAL COMPLETION

A. The Contractor shall send a letter stating the project is Substantially Complete with a list of items that are incomplete.

B. In the Application for Payment that coincides with the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed substantially complete.

C. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

D. Submit record drawings, maintenance manuals, property survey, and similar record information.

E. Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

F. Complete final clean up. Touch-up, repair, and restore marred exposed finishes.

1.4 INSPECTION PROCEDURES

A. On receipt of a request for inspection, the Architect will proceed or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of

construction that must be completed or corrected before the certificate will be issued.

B. The Architect will repeat inspection when requested and assured that the Work has been substantially completed.

C. Results of the completed inspection will form the basis of requirements for final acceptance.

1.5 FINAL ACCEPTANCE

A. Owner will notify Architect 30 days prior to anticipated substantial completion to schedule inspection.

B. Before requesting inspection for certification of final acceptance and final payment, complete the following:
   1. Submit final payment request with releases.
   2. Submit a final statement, accounting for changes to the Contract Sum.
   3. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.
   4. Submit final meter readings for utilities, a record of stored fuel, and similar data as of Substantial Completion.
   5. Submit consent of surety to final payment.
   6. Submit evidence of continuing insurance coverage complying with insurance requirements.

1.6 REINSPECTION PROCEDURE

A. The Architect will reinspect the Work upon receipt of notice that the Work has been completed, except items whose completion has been delayed because of circumstances acceptable to the Owner.

B. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

C. If necessary, reinspection will be repeated until obligations have been fulfilled & work has been completed.

1.7 RECORD DOCUMENT SUBMITTALS

A. Do not use Record Documents for construction purposes; protect from loss in a secure location; provide access to Record Documents for the Architect's reference.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark-up these drawings to show the actual installation. Mark whichever drawing is most

capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Document all Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

C. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover.

D. Record Specifications: Maintain one copy of the Project Manual, including agenda. Mark to show variations in actual Work performed in comparison with the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
2. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
3. Document related Change Orders and Record Drawings where applicable.

E. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

F. Delete Architect/Engineer title block and seal from all documents.

1. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

G. Submit documents to Architect with claim for final Application for Payment. Documents will be forwarded to Owner for approval.

1.8 FINAL CLEANING

A. Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program.

B. Perform cleaning prior to requesting inspection for certification of Substantial Completion.

C. Remove labels that are not permanent labels.

D. Clean transparent materials. Remove glazing compound. Replace chipped or broken glass.

E. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

F. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

G. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

H. Removal of Protection: Remove temporary protection and facilities.

I. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

J. Adjust operating Products and equipment to ensure smooth and unhindered operation.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 7700

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SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
   1. Emergency manuals.
   2. Operation manuals for systems, subsystems, and equipment.
   3. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.

1.2 SUBMITTALS

A. Manual: Submit one copy of each manual in final form at least thirty (30) calendar days before Substantial Completion inspection. Architect will return copy with comments within twenty-one (21) calendar days.
   1. Correct or modify each manual to comply with Architect's comments. Submit two (2) copies of each corrected manual within fifteen (15) calendar days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

A. Organization: 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 a title page, table of contents, and manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name, address, and telephone number of Contractor.
   6. Name and address of Architect.
   7. 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.

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.
   1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
      a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
   2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. 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 CDs for computerized electronic equipment.
   4. 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.
      c. Provide Computer Aided Drafting (CAD)/DWG formatted files for Owner record and deliver (2) USB thumb drives with soft copies of all documentation.
   5. Provide PDF files for all hard copies of documents provided, organized in an orderly fashion. Deliver (2) USB thumb drives with soft copies of all documentation.
   6.

2.2 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece

of equipment, and component for fire, gas leak, water leak, power failure, water outage, equipment failure, and chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences **for electric or electronic systems.**

1. Provide (2) copies of emergency operation instructions for various systems. Operation instructions shall be laminated. Coordinate with Owner on placement of emergency operation instructions for each system

2.3 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.

B. Descriptions: Include the following:

1. Product name and model number.
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.

C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

A. 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.

B. 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.

C.

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 inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and 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.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. 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 warranty and bond information, as described below.

B. 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.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:

D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training videotape if available, that detail essential maintenance procedures:

E. 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.

F. Spare Parts List and Source Information: include lists of replacement, repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation, and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

D. 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.

E. 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.

F. Comply with Section 01 7700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 01 7836 - WARRANTIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for preparing warranties of products and installation.

B. All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:
1. General Conditions, including, without limitation, Warranty/Guarantee Information;
2. Applicable sections of Division 01.

C. 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: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

D. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final 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 appropriate form properly executed.

1.2 SUBMITTALS

A. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size.

B. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.

C. Table of Contents: Contractor shall provide title of Project; name, address, and telephone number of Contractor and equipment supplier, and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the product or work item is specified.

D. Contractor shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.3 PREPARATION

A. Contractor shall obtain warranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s). Except for items put into use with City's permission, Contractor shall leave date of beginning of time of warranty until the date of completion is determined.

B. Contractor shall verify that documents are in proper form, contain full information, and are notarized, when required.

C. Contractor shall co-execute submittals when required.

D. Contractor shall retain warranties until time specified for submittal.

E. 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.

F. Comply with Division 01 Section 01 7700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
   1. Record Drawings.
   2. Record Specifications.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit one (1) copy of Record Drawings as follows:
      a. Initial Submittal:
         1) Submit one (1) set(s) of marked-up Record Prints.
         2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
      b. Final Submittal:
         1) Record CAD Drawing Files and Plots:
            a) Submit one (1) paper-copy set(s) of marked-up record prints.
            b) Submit record digital data files and three (3) set(s) or record digital data file plots.
            c) Plot each drawing file, whether or not changed and additional information were recorded. One (1) set.

B. Record Specifications: Submit annotated PDF electronic files (scanned, searchable copy) of Project's Specifications, including addenda and contract modifications.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of prints of the Contract Drawings and Shop Drawings.
   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 prepare the 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. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.

3. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 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. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders and Record Drawings where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual

performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Miscellaneous records include, but are not limited to, the following:

1. Field records on underground construction and similar work.
2. Surveys showing locations and elevations of underground lines.
3. Invert elevations of drainage piping.
4. Surveys establishing building lines and levels.
5. Authorized measurements using unit prices or allowances.
6. Records of plant treatment.
7. Ambient and substrate condition tests.
8. Certifications received in lieu of labels on bulk products.
9. Batch mixing and bulk delivery records.
10. Testing and qualification of trade persons.
11. Documented qualification of installation firms.
12. Load and performance testing.
13. Inspections and certifications by governing authorities.
14. Final inspection and correction procedures

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project. Documents shall be reviewed as part of the monthly Pay Application process and, if not complete, be the basis, for reducing by 5% from the monthly request for payment.

B. 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 reference during normal working hours.

END OF SECTION

SECTION 01 7913 - GENERAL COMMISSIONING 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. This section describes the scope of the formal commissioning process and the general requirements for the building systems outlined herein.

1.3 REFERENCES

A. California Energy Commission
   1. Title 24, Part 6, 2019, Building Energy Efficiency Standards
B. ASHRAE
   1. ASHRAE Guideline 0-2005

1.4 DEFINITIONS

A. Basis of Design (BOD): The documentation of design criteria and assumptions for systems, components, and methods chosen to meet the Owner's Project Requirements and applicable regulatory requirements, standards, and guidelines. The document includes narrative descriptions of the systems to be commissioned. The BOD is prepared by the Design Professionals.

B. Building Automation System (BAS): The automated building system providing control and user interaction with select building systems, such as, but not limited to, the HVAC, domestic hot water and lighting systems.

C. Commissioning Authority (CxA): An independent agent hired directly by the Owner and not otherwise associated with the Design Professional(s) or the General Contractor. The CxA assists the General Contractor with coordinating commissioning activities and witnesses the activities on behalf of the Owner.

D. Commissioning Issue (Cx Issue): A condition that affects, prevents or inhibits commissioning, and must be resolved to complete the commissioning process.

E. Commissioning Issues List (Cx Issues List): A log maintained by the CxA listing all Deficiencies and Cx Issues documented during the commissioning

process. All issues require action, correction and closure.

F. Commissioning Report (Cx Report): The final report issued at the conclusion of the commissioning process. The report will include an executive summary abbreviating the outcome of the commissioning process and identifying all outstanding issues. The report also contains all commissioning documentation collected throughout all phases of the project.

G. Commissioning Plan (Cx Plan): A document that outlines the organization, coordination, and requirements of the commissioning process in more detail.

H. General Contractor (GC): The contractor directly contracted to the Owner with overall responsibility for the project and all commissioning activities described herein.

I. Commissioning Coordinator (CxC): Individual within the GC firm who plans, schedules, directs and coordinates all the Trade Sub-Contractor's commissioning activities, and serves as the CxA's single point of contact for all administrative, documentation and coordination functions.

J. Deferred Testing: Testing performed at a later time, due to partial occupancy, equipment, load, seasonal requirements, design or other site conditions that disallow the test from being performed prior to substantial completion.

K. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents. A Deficiency will be considered a Cx Issue and documented on the Cx Issues List.

L. Design Professional (DP): Architects, engineers and other consultants involved in the design of the over project scope.

M. Functional Performance Test (FPT): A test of the dynamic function, operation and control of the equipment and systems to verify system performance to the fullest extent. Systems are tested under various operating modes and control sequences including failure modes. The FPTs are performed using manual (direct observation) or monitoring methods. The FPTs can include sequence of operation tests, performance verification tests, trend analysis and integrated systems tests. Functional performance tests are also often referred to as acceptance tests.

N. Installation Verification (IV): Field verification and documentation of proper installation of system equipment, assemblies and components prior to Startup. IV process is complete when systems are ready for Startup. IV's are organized and documented under the System Readiness Checklist (SRC) forms.

O. Monitoring: The recording of parameters (flow, current, status, pressure, etc) of equipment operation, which shall be completed using data-loggers or the Trending capabilities of BAS or control systems.

P. Owner's Project Requirements (OPR): A document describing the operational and functional requirements of a project, the expectations of how the facility will be used and operated, and the equipment and system expectations and requirements, as defined by the Owner. This document provides an explanation of the ideas, concepts, goals, success criteria, and supporting information for the project.

Q. Percent Sampling: Witnessing the Startup or testing of a selected fraction of the total number of identical or near-identical pieces of equipment such as VAV boxes.

R. Pre-Functional Checks & Tests (PFCs): These are various checks and tests performed on a piece of equipment or system just before, during, or after the initial Startup and operation. They are performed to confirm that the equipment and individual components were installed correctly and are working properly. Examples include checking fan rotation, sensor calibration, actuator testing, and spot temperature, pressure and electrical measurements. They also include system specific tests such as pipe system pressure tests, duct leakage tests, mechanical system test and balance and electrical equipment NETA testing. They are organized under the System Readiness Checklist (SRC) forms and must be completed prior to FPTs.

S. Startup: Initial starting or activating of equipment usually performed by the Trade Sub-Contractor or the Manufacturer's authorized representative.

T. System Readiness Checklist (SRC): A summary checklist, typically one page per equipment, covering the necessary commissioning tasks and required documentation to verify that a system is ready for FPTs, or system operation if no FPTs are performed. The tasks covered in the SRC include IV, Startup and PFC, and the Trade Sub-Contractor completed forms for these tasks are attached to the equipment specific SRC. The SRC must be completed and signed by the GC prior to conducting the FPTs.

U. TAB: Testing, Adjusting, and Balancing work on the air and water systems to ensure design flow conditions are met. Performed by the TAB Trade Sub-Contractor.

V. Trade Sub-Contractor: Typically a subcontractor to the GC who provides and installs specific building components and systems and/or provides certain services.

W. Trending: Monitoring using the Building Automation System (BAS) or a control system, to aid in functional testing and to verify system operation and performance under actual operating conditions.

X. Warranty Phase: The phase of the project immediately after the initiation of the building equipment warranty which spans the entire length of the equipment warranty.

1.5 SYSTEMS TO BE COMMISSIONED

A. This specification section is applicable to the following systems and equipment to be commissioned in this project:

1. All equipment and controls of the HVAC systems (does not include any process refrigeration equipment).
2. Building Automation System / HVAC system controls (Energy Management System)
3. Lighting system controls
4. Domestic hot water heating systems
5. Renewable Energy Systems
6. Back-up Power / Back-up Generator
7. Fire Systems including Fire Sprinkler and Fire Alarm
8. Security Electronics

1.6 SUMMARY DESCRIPTION OF COMMISSIONING

A. Commissioning is a quality assurance process for achieving, verifying and documenting that building systems are installed and perform functionally as intended according to the OPR, BOD, and the requirements of the Contract Documents.

B. Commissioning during the construction phase is intended to achieve the following specific objectives:

1. Commissioning review of the Trade Sub-Contractor submittals for systems to be commissioned, concurrent with the Design Professional's review.
2. Finalize the commissioning specific details within the Cx Plan.
3. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry-accepted minimum standards and that they receive the required operational checkout and testing by the Trade Sub-Contractors.
4. Verify and document proper performance of equipment and systems.
5. Completion of the Title-24, Part 6 acceptance test requirements and Certificate of Acceptance forms.
6. Verify that operation and maintenance documentation is provided by the Trade Sub-Contractors and is complete.
7. Develop a systems manual that provides future operating staff the information necessary to optimally operate the commissioned systems.
8. Verify that the Owner's facilities and operations personnel are trained according to Contract Document requirements.
9. Prepare the commissioning report and documentation.

C. The commissioning process does not take away from or reduce the responsibility of the GC to provide a finished and fully functioning building. The GC has overall responsibility to assure that all systems are properly tested and commissioned, and that all required commissioning documents are completed and provided to the Owner.

1.7 GENERAL COMMISSIONING PROCESS

A. Unless otherwise noted in the trade specific commissioning specification sections, the general commissioning process is as follows. See the trade specific commissioning specification sections for additional details on the commissioning process.

B. Submittal Reviews by the CxA (concurrent with the Design Professional reviews)

1. The GC shall include the CxA on the distribution of the Trade Sub-Contractor issued submittals to the Design Professionals, for the systems to be commissioned. The CxA will provide review comments to the Design Professionals.

C. Cx Plan and Form Development

1. The CxA prepares a Cx Plan that provides guidance in the execution of the commissioning process during construction.

2. The CxA develops the SRC and FPT forms and provides them to the GC and Trade Sub-Contractors for review and comment.

D. System Readiness Checklist Activities

1. The Trade Sub-Contractors shall perform IV, Startup and PFC activities. The Trade Sub-Contractors and the CxC shall document completion of these activities on the SRC forms and attach the completed IV, Startup, and PFC forms to the SRC.

2. The CxA will perform various field observations and reviews during the installation phase and back-checks of the completed IV. The CxA will also witness a percent sampling of the Startups and PFCs (some of the witnessing may be performed as back-checks after PFCs are completed).

a. The Trade Sub-Contractor shall resolve any PFC results deemed unacceptable by the CxA. The Trade Sub-Contractor shall execute a new sample of the PFCs (some of the witnessing may be performed as back-checks after the PFCs are completed). The CxA shall deem the PFCs acceptable after resolution of all issues and any witnessed sampling results in no issues.

E. Functional Performance Testing (Acceptance Testing)

1. Once the GC completes the SRC forms, the Trade Sub-Contractors shall execute all FPTs (including the applicable Mechanical, Lighting and Process Space and Equipment acceptance tests per Title-24, Part 6 2019) and the CxA witnesses a sample as defined in the Cx Plan.

The intent is to integrate any required functional tests per Title-24 into the overall commissioning process. The FPTs may be achieved by any combination of manual testing, monitoring or trending.

a. Any witnessed sampling of the FPTs that do not pass shall require the Trade Sub-Contractor to resolve the issue for all equipment and a new sample of the FPTs shall be executed and witnessed by the CxA. The CxA shall deem the FPTs acceptable after resolution of all issues and any witnessed sampling of tests has passed.

b. The responsible Division 21, 22, 23, 26, 27 and 28 Trade Sub-Contractors are responsible for providing qualified and certified "Field Technicians" (per Title 24, Part 6 2019 requirements) to perform and document the results of the acceptance procedures (Acceptance Tests) on Certificate of Acceptance forms per Title 24, Part 6 2019.

c. The GC shall assign the responsible Trade Sub-Contractor for completing each specific Acceptance Test.

d. The GC or the responsible Division 21, 22, 23, 25, 26, 27 and 28 Trade Sub-Contractor shall be the designated "Responsible Person" per Title 24, Part 6 2016, for certification of the acceptance testing/verification on the Certificate of Acceptance forms (contained in Appendix A of the Title 24, Part 6 2016 Compliance Manual).

e. Functional test for the Dispatch/Call Center

2. The Cx Plan will define any seasonal/deferred testing.

F. Deficiencies and Commissioning Issues

1. Throughout the process, the CxA records Cx Issues on the Cx Issues List and distributes the list to the team. The GC and Trade Sub-Contractors shall correct Cx Issues and retest the system(s) without delay at no additional cost to the Owner. The CxA will verify the completion of the issues and make all amendments to the issues list.

G. O&M Manuals, Training Verification and Final Documentation

1. The CxA will verify the Trade Sub-Contractors provides complete operation and maintenance (O&M) manual documentation to the Owner.

2. The GC shall submit to the CxA and Owner a training schedule and specific training agendas (for each training class), for review prior to conducting any training. The CxA will also verify completion of the training by receiving a copy of the training class sign-in sheets and any training materials / handouts, provided by the GC**.**

3. The CxA will develop the Systems Manual with assistance from the GC and Trade Sub-Contractors. The systems to be included are the

HVAC systems and controls, lighting controls, domestic hot water systems and controls, and any renewable energy systems and others as specified herein.

4. The CxA will complete the Final Construction Phase Commissioning Report and documentation for the Owner with assistance from the GC and Trade Sub-Contractors.

H. Post-Occupancy Warranty Phase Commissioning

1. The CxA will report any identified performance issues, warranty items or problems to the CxC via a Warranty Phase Cx Issues List for correction by the GC and Trade Sub-Contractors during or prior to the end of the warranty period.
2. The CxA will review trend data during the Warranty Phase and will report any identified issues.
3. No later than 60 days prior to the expiration of the first 12 month warranty period of building occupancy, the CxA will return to the facility to interview facility O&M staff, walk the facility and review systems operation and trend data where applicable. Key representatives from the GC and Trade Sub-Contractors shall attend a site walk-through and meeting, as determined by the CxA.

1.8 COMMISSIONING TEAM

A. The Commissioning Team is responsible for performing the process and achieving successful commissioning results. The Commissioning Team is comprised of the following:

1. Owner's Representatives
2. Design Professionals (DP).
3. Commissioning Authority (CxA).
4. General Contractor (GC)
5. GC's Commissioning Coordinator (CxC)
6. Trade Sub-Contractors responsible for specific types of systems being commissioned:
    a. Mechanical Contractor
    b. Electrical Contractor(s)
    c. HVAC Controls Contractor
    d. HVAC Testing and Balance (TAB) Contractor
    e. Plumbing Contractor

1.9 RESPONSIBILITIES

A. General:

1. The Commissioning Team and all others involved in the commissioning process shall follow the Cx Plan, attend the commissioning kickoff meeting, and attend additional commissioning meetings as necessary.

B. Commissioning Authority (CxA)

1. The primary role of the CxA is to oversee, organize and lead the commissioning team and assist the GC and Trade Sub-Contractors in executing the commissioning process.
    a. Prepare the Cx Plan and develop the SRC and FPT forms.
    b. Work with the GC to schedule commissioning activities.
    c. Lead commissioning team meetings, prepare meeting agendas and distribute meeting minutes.
    d. Observe on a sampling basis the system and equipment installation, start-up, checkout, and testing for compliance with the Contract Documents; and review completion of commissioning documentation.
    e. Sample witness the execution of the FPTs (including Title-24 Acceptance Tests) by the Trade Sub-Contractors.
    f. Be the authority on commissioning test results and other commissioning program elements completion. Prepare, maintain and distribute the Cx Issues List.
    g. Review and comment on training agendas and verify that training is completed and O&M manuals are delivered.
    h. Lead the effort in developing the Systems Manual for energy-related systems in accordance with project requirements.
    i. Assemble the commissioning documents and prepare the Commissioning Report.
2. The CxA is not responsible for:
    a. Design concept or design criteria
    b. Review for code compliance
    c. Inspector of record services
    d. Design and construction scheduling
    e. Cost estimating
    f. Construction management
    g. Providing tools and test equipment used for commissioning.
    h. Scheduling startup and testing
    i. Coordinating the work of Trade Contractors and any special testing agents
    j. Performing startup and testing

C. General Contractor:

1. The GC is responsible for performing all commissioning tasks, including tasks assigned to Trade Sub-Contractors and ensures that all Trade Sub-Contractors execute their commissioning responsibilities according to the Contract Documents, Cx Plan, and schedule.
    a. Include the cost for commissioning in the project cost.
    b. Assign a CxC for the duration of the project with responsibilities outlined herein.
        1) The CxC shall have at least five years' experience within the disciplines of construction.
        2) The GC shall submit the name of the person(s) assigned as the CxC to the CxA within a month of contract award.
    c. Schedule and coordinate the commissioning meetings with the CxA.
    d. Plan, schedule, coordinate and facilitate the commissioning work performed by the Trade Sub-Contractors. Provide sufficient lead time of at least 10 days to notify the CxA in advance of commissioning activities. Update the master construction schedule periodically with commissioning progress and activities.
    e. Review, comment and accept the Cx Plan prepared by the CxA.
    f. Furnish continual updates of any construction related documents such as change orders, submittals, shop drawings, ASIs and RFIs to the CxA. Electronic files are acceptable.
        1) The CxC shall ensure the issuance of the requested submittals for review by the CxA when also issued to the Design Team.
    g. Obtain and review the Trade Sub-Contractor IV, Startup and PFC forms prior to use.
    h. Using IV, Startup, PFC, SRC and FPT forms, document and certify the completion of all work and all systems are installed, operational, and functionally tested.
    i. Ensure completion of the Title 24, Part 6, 2016 Acceptance Tests and completion and certification of the Certificate of Acceptance forms.
    j. Organize all Trade Sub-Contractor-completed Cx forms to be submitted to the CxA for review.
    k. Evaluate deficiencies identified on the Cx Issues List. The CxA will track the issues according to the responsible entity. Collaborate with Trade Sub-Contractors and recommend corrective action. Assure resolution of all Cx Issues.
    l. Prepare a training schedule along with the Trade Sub-Contractor training agendas and submit to CxA and Owner for review.

Execute training of Owner's personnel per approved training schedule and agendas.

m. Prepare O&M Manuals in accordance with the Contract Documents.

n. Assist the CxA in developing the Systems Manual.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. The responsible Trade Sub-Contractor shall furnish all standard testing equipment required to perform Startup, PFCs and FPTs.

B. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerance specified in the Contract Documents. If not otherwise specified, the following minimum requirements apply:

1. All equipment shall be calibrated according to the manufacturer's recommended intervals (or within one year if not otherwise specified) and recalibrated when dropped or damaged.

2. Calibration tags shall be affixed to or certificates readily available for all test equipment.

PART 3 -EXECUTION

3.1 SCHEDULING AND COORDINATION

A. The CxA will provide an initial list of commissioning milestones and deliverables to the CxC for scheduling purposes.

B. The GC shall integrate all commissioning activities, milestones and deliverables into the master construction schedule with assistance and input from the CxA.

C. The CxC shall provide sufficient notice to the CxA and Owner for scheduling and coordinating commissioning activities. A minimum 10 days' notice shall be provided to the CxA for witnessing equipment Startups, PFCs, FPTs, and Title 24 Acceptance Tests.

D. The Commissioning Team shall address scheduling problems and make necessary modifications in a timely manner in order to expedite the commissioning process.

E. The General Contract shall ensure that all work is complete and ready for testing. Should the work not be complete as indicated, the GC shall pay for all trip/remobilization costs associated with the Cx mobilization.

3.2 MEETINGS

A. When commissioning team member attendance is required, as determined

by the CxA and CxC, be punctual and attentive during the meeting.

1. The CxA will conduct a commissioning kick-off meeting, at a The date and time mutually confirmed by required attendees. All team members involved in the commissioning process shall attend the kick-off meeting.
2. The CxA will plan other commissioning meetings as deemed necessary as construction progresses. These meetings will cover planning and coordination, and Cx Issues resolution.
3. The frequency of meetings will vary through construction, but generally increase during Startup and commissioning activities.

B. The CxA will write and distribute meeting minutes documenting the meeting discussion, conclusions, and actions for each team member.

3.3 COMMISSIONING ISSUES, BACK-CHECKS AND RE-TESTING

A. All Deficiencies and Cx Issues shall be corrected promptly. The responsible party shall correct the issue and inform the CxC and CxA of the resolution and completion date. The CxA will record completion on the Cx Issues List after a successful back-check or verification.

1. For all Cx Issues identified during the pre-functional system readiness activities, the CxA will back-check and verify the completion of the issues where appropriate.
2. For all Cx Issues identified during FPT, the Trade Sub-Contractor shall retest to verify the resolution of the issue and to complete the FPT.
3. Where sampling is used for witnessing PFCs and FPTs, the results shall be deemed acceptable once all noted issues are resolved and any new sample set of tests or checks have passed. The CxA will witness one (1) re-test for each equipment and will perform one (1) back-check verification of any completed system readiness issue. General Contractor shall bear the cost of re-testing and back-check verification greater than 5% of the required tests.

3.4 COMMISSIONING ACCEPTANCE, CLOSEOUT AND REPORTING

A. Completion of the main commissioning activities (system readiness checks, functional and acceptance testing, training, and delivery of O&M manuals) shall be accomplished as a prerequisite for substantial completion. Completion of all Cx Issues and any re-testing shall be completed prior to final acceptance of commissioning by the Owner.

B. After completion of the commissioning activities and following review of the completed commissioning documents that includes the draft Cx Report executive summary, all test results and the latest Cx Issues List with all remaining Cx Issues and deficiencies, the Owner will provide a formal written acceptance of the project construction phase commissioning.

C. Upon completion of all commissioning activities, the CxA will prepare and submit to the Owner a Final Cx Report detailing all completed commissioning activities and documentation. The CxC shall support this effort by providing all GC and Trade Sub-Contractor commissioning documentation.

D. The Final Cx Report will include the Owner's written acceptance of construction phase commissioning.

END OF SECTION

SECTION 01 8121 – ENVIRONMENTAL IMPACT OF MATERIALS

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 SECTION INCLUDES

A. Objectives: To obtain acceptable Indoor Air Quality (IAQ) for the completed project and minimize the environmental impacts of the construction and operation, the Contractor during the construction phase of this project shall implement the following procedures singly or in combination:
   1. Select products that minimize consumption of non-renewable resources, consume reduced amounts of energy, and minimize amounts of pollution to produce, and employ recycled and/or recyclable materials. Obtain Owner Representative's approval of all materials listed in Part 2 prior to placing the order with the manufacturer of the material.
   2. Maintain a materials log book and verification that materials used have been reviewed for environmental considerations as outlined in this Section.
   3. Control sources of potential IAQ pollutants by controlled selection of materials and processes used in project construction in order to attain acceptable IAQ as defined in this section.

B. Products and processes that achieve the above objectives to the extent currently possible and practical have been selected and shown in the Contract Documents. The Contractor is responsible to maintain and support these objectives in developing means and methods for performing the work of this Contract and in proposing product substitutions and/or changes to specified processes.

1.3 RELATED SECTIONS

A. Section 01 7419 - Construction Waste Management: Administrative and procedural requirements for salvaging, recycling, and disposing of demolition and construction waste.

B. Section 01 8113 – Sustainable Design Requirements – CALGreen.

C. Division 23 Section "Testing, Adjusting, and Balancing": Baseline testing for Indoor Air Quality and duct cleaning requirements.

1.4 SUBMITTALS

A. Submit the following in accordance with Conditions of the Contract and Division 1 specification sections.
   1. Materials Log: Maintain a notebook with sectional dividers for each material specification listed in Part 2 of this Section. Each divider shall be labeled with the specification section number and shall record the VOC content as specified in Table 2.1, the recycled content as specified in Table 2.2, and other environmental specifications of the material such as identified in Part 2 below.
   2. The section shall also include the Manufacturer's Safety Data Sheet (MSDS), product label and/or manufacturer's data verifying conformance with the environmental specifications, and shall identify in general terms where the product is to be used in the building. This notebook shall be maintained weekly as materials are ordered, shall be accessible to the Owner's Representative at all times, and submitted in bound form as part of the project requirements specified in Section 01 7700 – Closeout Procedures.

1.5 QUALITY ASSURANCE

A. General: Perform the work of this Section as a supplement and in accordance with applicable requirements of Section 01 4000 – Quality Control for Contractor's Quality Control responsibilities.

B. Conduct a Coordination and Mutual Understanding Meeting prior to the start of construction. Discuss the IAQ and environmental impact compliances required by this Contract. The purpose of this agenda item is to develop a mutual understanding of the IAQ and environmental impact program requirements, and coordination of the Contractor's management of the program with the Contracting officer and the Construction Quality Manager.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: The following special IAQ and environmental impact requirements apply to materials specified in their respective technical specification sections of this Project Manual. See Tables 2.1 and 2.2 for definitions of low VOC content and recycled content.

B. Division 03 - Concrete:
   1. Cast-in-Place Concrete:
      a. Reinforcing steel shall maximize recycled scrap steel content.
      b. Form release agents shall be low VOC content.
      c. Liquid membrane-forming curing and sealing compound shall be low VOC content.

2. Structural Precast Concrete:
    a. Form release agent shall be low VOC content.
    b. Reinforcing bars shall maximize recycled steel content.
3. Architectural Precast Concrete:
    a. Form release agent shall be low VOC content.
    b. Reinforcing bars shall maximize recycled steel content.

C. Division 04 - Masonry:
1. Concrete Unit Masonry:
    a. Concrete Unit Masonry shall maximize the use of recycled materials.
    b. Reinforcing bars shall maximize the use of recycled steel.

D. Division 05 - Metals:
1. Structural Steel: Framing steel shall maximize the use of recycled steel.
2. Ornamental Handrails and Railings: Wood cap originates from a sustainably managed forest certified by a Forest Stewardship Council (FSC) accredited certification group such as Smartwood, Scientific Certification Systems (SCS), or other independent forest management certification agency.

E. Division 06 – Wood, Plastics, and Composites: Wood products:
1. Each specified solid and veneer wood species must originate from a sustainably managed forest certified by a Forest Stewardship Council (FSC) accredited certification group such as Smartwood or Scientific Certification Systems (SCS).
2. Fiberboard used as blocking, millwork, casework substrate, underlay and door cores must be urea-formaldehyde free, and not exceed ANSI A208.1-1993 emission standard of 0.20 ppm of formaldehyde.
3. Structural fiberboard (OSB, MDF, and particleboard) shall maximize post-consumer waste material.
4. Plastic laminates will be installed with water-based, formaldehyde free, low VOC (volatile organic compound) adhesives.
5. Millwork and casework adhesives will be water-based, formaldehyde free, low VOC adhesives.
6. Transparent wood finish systems shall utilize only waterborne acrylic sealers and finish coats.
7. Use of chromated copper arsenate (CCA) as a wood treating material is not permitted; use of ammonium copper quat (ACQ) is acceptable.
8. Cast Resin Countertops: Silicone sealants shall be water-based low VOC silicone sealant.

F. Division 07 - Thermal and Moisture Protection:
1. Building Insulation:
    a. Insulation materials manufactured using chlorofluorocarbons (CFCs) shall not be used. (CFCs have been completely phased out of U. S. manufactured insulation products.)

b. Extruded polystyrene insulation shall not be manufactured with chlorofluorocarbon (CFC) blowing agent and shall maximize recycled content.
c. Fiberglass batt insulation, fiberglass board insulation, and mineral wool insulation shall maximize use of recycled material.
d. Mineral wool fire safing insulation shall maximize recycled material.

2. Single-Ply Membrane Roofing: Rigid insulation manufactured with chlorofluorocarbon (CFC) blowing agents shall not be used.
3. Joint Sealants:
   a. Interior sealants shall not contain: mercury, butyl rubber, neoprene, SBR (styrene butadiene rubber), or nitrile.
   b. Silicone sealants shall be low VOC content.
   c. Polyurethane sealants containing mercury shall not be used.
   d. Compressible foam joint fillers, polyester polyurethane foam impregnated with neoprene rubber or acrylic ester styrene copolymer used in this facility shall not be manufactured with CFC blowing agents.
   e. Sealants formulated with aromatic solvents (organic solvent with a benzene ring in its molecular structure) fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, or their components shall not be used.

G. Division 08 – Openings:
1. Flush Wood Doors: Fiberboard used as door cores shall meet the requirements of ANSI A208.1 for particleboard, including the requirement to meet a threshold of less than 0.30 ppm of formaldehyde using test method ASTM E1333.
2. Glass and Glazing:
   a. Sealants and glazing compounds shall be low VOC content.
   b. Sealants and glazing compounds formulated with aromatic solvents (organic solvent with a benzene ring in its molecular structure), fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, or their components will not be used.

H. Division 09 - Finishes:
1. Portland Cement Plaster:
   a. Plaster including additives such as epoxy or other resins shall be low VOC content.
   b. Steel lath shall maximize recycled steel.
2. Gypsum Drywall:
   a. Gypsum board must contain recycled or synthetic gypsum. Facing paper shall be manufactured from recycled newsprint including post-consumer waste.
   b. Glass fiber sound attenuation blanket insulation shall maximize recycled material.

c. Joint compound shall be low VOC content.
d. Multi-layer gypsum board applications shall be screw attached and not laminated with adhesives.
e. Provide for thorough cleaning and removal of all silica/gypsum dust upon completion of gypsum drywall installations, including, but not necessarily limited to, all components in plenum spaces, including tops of pipes and sills, and insides and outsides of ducts (as required in Division 15).
f. Only paper joint tape (no fiberglass tape) will be used.
g. Mineral fiber sound attenuation blankets shall maximize recovered material.
h. Steel studs, runners, and channels for framing shall maximize recycled steel content.

3. Terrazzo: Sealers shall be low VOC content.
4. Acoustic Panel Ceilings:
   a. Ceiling panels shall maximize use of recycled material, and be finished with water-based low VOC paint.
   b. Suspension systems shall maximize recycled material.
5. Resilient Tile Flooring:
   a. Rubber floor tiles shall maximize recycled materials.
   b. Adhesives shall be low VOC content.
6. Sheet Vinyl Floor Covering: Sheet vinyl floor covering shall be installed with water-based, low VOC adhesives per manufacturer's instructions.
7. Carpet/Carpet Tile:
   a. Carpet shall be one that is accepted in an operating recycling program which extracts component materials for reuse and/or reclaims inherent energy, and does not contribute significantly to land fill.
   b. If an adhesive is required for installation, use low VOC carpet manufacturer recommended adhesive and install per manufacturer's recommended frame or perimeter adhesive pattern method. (Full field glue-down is not acceptable except for carpet with an integral dry film adhesive back.)
   c. If a seam sealer is required for installation, use carpet manufacturer recommended low VOC seam sealer or recommend heat welded seaming.
8. Paint and Polychromatic Finish Coating:
   a. Do not use water-based paints formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure), formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides. Water based paints shall be low VOC and shall have a flash point of 61 degrees C or greater.
   b. Where it is necessary to use solvent-based paints, they shall be formulated for low VOC emissions and shall not be formulated with formaldehyde, halogenated solvents, mercury or mercury

compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides, nor formulated with more than 10 percent aromatic hydrocarbons by weight.

c. The following shall be low VOC and not be formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure) formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides.
   1) High performance water based acrylic coatings.
   2) Pigmented acrylic sealers.
   3) Catalyzed epoxy coatings.
   4) High performance silicone grafted epoxy coatings.

I. Division 11 - Equipment:
   1. Walk-in-Environmental Rooms:
      a. Verify CFC compliance with EPA regulations and the Clean Air Act.
      b. Verify that the job site mechanic has received accredited training conforming to EPA and the Clean Air Act of July 1, 1992, in regard to venting of EPA regulated refrigerant gases.

J. Division 12 - Furnishings:
   1. Laboratory Casework: Silicone sealant shall be water-based silicone sealant with low VOC content.

K. Division 22 - Plumbing:
   1. Basic Piping Materials and Methods: Use solder that does not contain lead.
   2. Pipes and Pipe Fittings: Use solder that does not contain lead.
   3. Plumbing Fixtures: Plumbing fixtures must meet water conservation requirements of the Energy Policy Act.

L. Division 23 – Heating, Ventilating and Air Conditioning:
   1. Basic Mechanical Materials and Methods: Use low VOC joint sealers.
   2. Mechanical Insulation: Mechanical sound insulation materials within the duct shall include an impervious, non-porous coating that prevents dust from accumulating in the insulating materials.
   3. Metal Ductwork: Use low VOC joint and seam sealants.

M. Division 31 – Earthwork:
   1. Site Clearing: Topsoil shall be provided by the Contractor from on-site material which has been stockpiled for re-use. Off-site borrow should only be used when on-site sources are exhausted.
   2. Aggregate Base Course: Aggregate base course for on-site paved areas shall maximize use of recycled ABC.

N. Division 32 – Exterior Improvements:

1. Asphaltic Paving: Asphalt paving shall maximize use of recycled asphalt paving.
2. Portland Cement Concrete Paving: Per Federal Acquisition Regulations (FAR) requirements, there will be a minimum of 20 percent fly ash content in cement.
3. Landscaping:
    a. All wood fiber or cellulose hydromulch shall be 100 percent recovered content.
    b. All herbicides must be EPA approved and applied per manufacturer's instructions. All herbicide use must be approved by the Owner's Representative.

O. Division 33 - Utilities:
1. Underground Utilities - Basic Piping Materials and Methods: Use solder that does not contain lead.
2. Site Potable Water Lines and Underground Chilled Water (CHW) Piping System: No solder will be used with lead content.

2.2 VOC CONTENT

A. Follow VOC content levels and content requirements listed in 2022 CBC.

PART 3 - EXECUTION

3.1 GENERAL

A. Submit to the Owner's Representative for review and approval product data such as MSDS and environmental impact data prior to ordering project materials.

B. Prepare and maintain a Materials Log, providing information on content of materials, where specific materials are to be used, MSDS, and environmental specifications of the material. Maintain the log book weekly as materials are ordered.

3.2 FIELD QUALITY CONTROL

A. Owner reserves the right to take samples and perform, at random, tests of approved materials delivered to the job site to verify compliance of actual materials with specifications.

END OF SECTION 01 8121

EXHIBIT A

FINISH AND MATERIALS SCHEDULE

EXHIBIT B

PAINT SCHEDULE

EXHIBIT C

LIGHT FIXTURE CUTSHEETS

EXHIBIT D

PLUMBING CUTSHEETS

EXHIBIT E

TOILET ACCESSORY CUTSHEETS

EXHIBIT F

GEOTECHNICAL REPORT

EXHIBIT G

SOIL CORROSIVITY REPORT

1

EXHIBIT A FINISH AND MATERIALS SCHEDULE

Item	Finish Schedule	Description	Color Designation	Location - See Finish Schedule for All Locations
FLOORS				
Sealed Concrete				
	F1		Natural plain grey	
Polished Integral Color Concrete				
Davis Colors	F2		Mesa Buff	Reception
Vinyl				
Polyflor	F3	Hydro Evolve	Blue Nile	w/ vinyl cove base
Carpet				
Forbo	F4A	Flotex Penang	Nimbus	56% random at Activity Room; 88% random in Office and Breakroom
	F4B	Flotex Penang	Neptune	22% random at Activity Room; 6% random in Office and Breakroom
	F4C	Flotex Penang	Sapphire	22% random at Activity Room; 6% random in Office and Breakroom
	F4D	Flotex Penang	Azure	Walk-off mat at Activity Room, See A800
WALL BASE				
Rubber Base				
Roppe Pinnacle	B1A	6" Vulcanized rubber Wall Base	669 Battleship	
Burke	B1B	6" Thermoplastic rubber Wall Base	820 Daffodil	At Reception Desk

1

EXHIBIT A FINISH AND MATERIALS SCHEDULE

Item	Finish Schedule	Description	Color Designation	Location - See Finish Schedule for All Locations
Vinyl				
	B2	To match vinyl flooring		At Locations where vinyl floor transitions to Wall Tile, 6" cove
WALLS				
Gypsum Wall Board				
	W1		See Paint Schedule	Interior Walls
Ceramic Tile				
Daltile	W2-A	Finish Line 4x12	Glossy White	Field Tile
	W2-B	Color Match 4x12	Glossy Daisy	Accent Tile
Grout				
Laticrete			Sterling Silver 78	White Tile
			Toasted Almond	Yellow Tile
Fiber Reinforced Panel				
Crane-Kemlite	W3	Glasboard with Surfaseal	White	Janitor Closets and Maintenance Spaces
CMU Block				
Basalite	W4			
Aluminum Framed Storefront System		1		
Kawneer	W5	Trifab 451 Center Glass	Clear Anodized	

1

EXHIBIT A FINISH AND MATERIALS SCHEDULE

Item	Finish Schedule	Description	Color Designation	Location - See Finish Schedule for All Locations
CEILINGS				
Gypsum Board				
	C1		See Paint Schedule	
Cement Board with Acrylic Primer				
Sto	C3	Sto Acrylic Primer with Epoxy Finish	See Paint Schedule	Showers at single user restroom/changing room
Acoustical Ceiling Panel				
Autex	C4	Cube	Pavilion	1" air gap between deck and panel
FURNISHINGS AND SPECIALTIES				
Countertops				
Neolith	SD-1	Sintered Stone Countertop	Fusion Pietra di Luna Satin	Countertops, typical, U.O.N.
Corian	SD-2	Solid Surface Countertop	Designer White	Reception Desk
Laminate				
Nevamar	PL-1		Chalk White	Casework (Activity Room)
Formica	PL-2		Graystone Matte Finish	Casework (Office, Breakroom, Lifeguard)
Arborite	PL-3		Daffodil	Reception Desk
Toilet & Shower Compartments				

1

EXHIBIT A FINISH AND MATERIALS SCHEDULE

Item	Finish Schedule	Description	Color Designation	Location - See Finish Schedule for All Locations
Bobrick		DuraLine Series CGL	Dove Grey	Locker Rooms
Phenolic Lockers				
Hollman		2-tier w/ integrated bench	Dove Grey	
Benches				
Hollman		12" deep	Designer White	Locker Rooms – Integrated
		24x48	Designer White	Locker Rooms – Accessible Bench
Window Shades				
Mecho Shade		EcoVeil Screens 1550 Series (3% Open)	1563 Grey / 1570 Shadow Grey	All shades (Alabaster for fascia)
Privacy Glazing				
GlasPro		Interior Translucent Glass	True Sea Salt White	Office

APPENDIX CONTINUES ON NEXT PAGE

EXTERIOR FINISH AND MATERIALS				
Item	**Finish Schedule**	**Description**	**Color Designation**	**Location**
Composite Decking				
NewTechWood		Magellan	Peruvian Teak	Pool Deck Bleachers
Aluminum Brake Metal				
		Aluminum Coil		All Exterior Brake Metal Covers and Flashing
Standing Seam				
AEP Span		Design Span	Regal White	Roof
Aluminum Metal Panel				
Morin	Color 1	Pulse P-9	Regal White	Exterior Walls
	Color 2	Pulse P-9	Custom to match Benjamin Moore Rocky Mountain Sky 2066-40	Exterior Wall, Accent
	Color 1	MX-6, folded ends	Regal White	Exterior Walls at alcoves
Metal Panel Ceiling Alcove				
Morin		MX-6	Regal White	
Exterior Storefronts				
Kawneer	W6	Trifab 451T VersaGlaze Front Glazed	Anodized Clear	Exterior Storefront Mullions at Building
Glass				
Insulated Glass Units, Clear		Solarban 90 on Starphire	Low E Coating	All Exterior Insulated Glass Units UON
Fabric Canopy (Alternate)				

EXTERIOR FINISH AND MATERIALS				
Item	**Finish Schedule**	**Description**	**Color Designation**	**Location**
SolaMesh		Stretched Fabric with Stainless Steel Cables and Grommets	Smoke Grey	Wet Pool Storage Enclosure Cover
Fence Screens				
ci Fabrics		Permatex Mesh Wind Screen	Black	Pool Storage Enclosure

END

1

EXHIBIT B PAINT SCHEDULE

Number	Description	Color Designation	Location
P-1	White	Benjamin Moore Chantilly Lace OC-65	All gypsum board walls, soffits & ceilings U.O.N., all interior cement plaster ceilings, exposed metal decks, exposed structural steel, exposed piping, ducts, conduit, wiring etc. All interior doors.
P-2	Blue	Benjamin Moore Rocky Mountain Sky 2066-40	Exterior doors and frames #102, 103, 105, 107, 111
P-3	White	Benjamin Moore Pure White OC-64	Exterior sheet metal flashing exposed to view, exterior structural steel (Tnemec), exterior doors and frames #100 and 207
P-4	Grey	Dunn Edwards Covered in Platinum DE6367	Exterior doors and frames at south elevation, trash enclosure roof
P-5	Metallic	Tnemec Fluoronar 1078V 30MT Silver Mist	HSS above breezeway storefront

1

END

Pre-Demolition Asbestos and Lead Assessment Report
2102 S. Flower Street
San Diego, California

Omega Project Number 2024-5452COSA
August 13, 2024

Prepared For:

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APPENDICES

1. Executive Summary

Omega Environmental Services, Inc., (Omega) conducted a pre-demolition asbestos, lead, and polychlorinated biphenyls (PCBs) assessments at 2102 S. Flower Street in Santa Ana California. Zachary Rosas, a California Certified Site Surveillance Technician (CSST #22-7076) and California Department of Public Health (CDPH) Lead Sampling Technician (ID# LRC-00003328), and William Hawck and Tony Hoang AHERA[1] Asbestos Building Inspectors and CDPH Lead Sampling Technicians with Omega performed the assessment on July 2, 2024.

The assessment was conducted to evaluate the presence of suspect asbestos-containing materials (ACMs), and/or asbestos-containing construction materials (ACCMs), lead-based paint (LBP), lead-containing paint (LCP), and polychlorinated biphenyls (PCBs) in building materials and components. In addition, Omega conducted a limited visual inspection and inventory of potential universal waste, including PCBs in light fixtures ballasts, mercury vapor in light tubes and radioactive tritium gas in exit signs.

Asbestos Containing Materials

One hundred three (103) bulk samples of suspect ACMs/ACCMs were collected during the assessment. Based on the laboratory analytical results, asbestos was detected in the following materials:

Asbestos-Containing Materials (ACMs)

- Gray rubberized mastic, roof area at seams
- 12”x12” gray vinyl floor tile with associated black/yellow mastic, main lobby
- 12”x12” blue vinyl floor tile with associated black/yellow mastic, main lobby
- 6” transite pipe, roof

Approximately two thousand and ninety-five (2,095) square feet of ACMs were identified during the assessment.

The estimated quantities are based on a visual assessment and shall not be used for bidding purposes. The abatement contractor must field verify the quantities of the ACMs.

Asbestos-Containing Construction Materials (ACCMs)

Based on the laboratory analytical results, ACCMs were identified in any of the sampled materials.

Appendix 1 includes copies of the results table, field map with general sample locations, laboratory analytical results, chain of custody, and ACMs photo log.

NOTE: Inaccessible suspect building materials such as, but not limited to insulation, gasket, mastic, surfacing, and flooring materials may exist within walls/ceiling/door/floor cavities, the interior of mechanical components, heating, ventilation, and air conditioning (HVAC) system equipment, pipe chases, sub-floors, and/or concealed spaces. Omega typically investigated for flooring beneath carpeting by lifting small corner sections of carpet. If tile/mastic were noted, they have been identified in the report. If tiles were not seen at corners under the carpet, it does not imply that there are no tiles beneath the carpeted floor. Omega did not conduct any destructive investigation on floors to identify

[1] Asbestos Hazard Emergency Response Act

multi-layered tile/underlayment system/concealed paper, vapor barriers, and floor tile/mastics under the floor system. All unidentified materials should be treated as ACMs in accordance with Cal-OSHA Title 8 CCR 1529 Asbestos, until they are sampled and analyzed for asbestos.

Lead Containing Materials

A lead screening was performed to determine the presence of lead-containing materials on building components using an X-ray fluorescence (XRF) Lead Spectrum Analyzer.

Lead-Based Paint (LBP)

Based on the XRF measurements, the following surface coatings contain lead above the Federal and State standard of 1.0 Milligrams per Centimeter Square (mg/cm^2) and are LBP:

- Silver paint on metal HVAC exhaust lid, roof
- Blue paint on wood flashing, roof
- 12”12” brown porcelain tiles, wall, women’s restroom, pool area
- 12”12” white porcelain tiles, wall, women’s restroom, pool area

Approximately three hundred and five (305) square feet of LBP were identified during the assessment.

Lead-containing Paint (LCP)

Based on the XRF measurements, the following materials contain lead below the State threshold of 1.0 mg/cm^2 and are considered LCP:

- White paint on stucco wall, pool area
- Blue paint on stucco wall, pool area
- White/gray paint on the metal exhaust vent
- 6”x6” light blue porcelain tiles, pool edges
- 1”x1” white porcelain tiles, pool area
- 6”x6” black porcelain tile, pool area
- 6”x6” white porcelain tile, pool edges
- Brown paint on the metal door frame, community building
- Blue paint on metal gate, women’s restroom
- White paint on drywall, women’s restroom, pool area
- White paint on brick wall, women’s restroom hall
- Multi-color porcelain floor tile, women’s restroom, pool area
- White porcelain toilet bowl/base, throughout restrooms
- Blue paint on brick wall, pool area
- Multi-color mural on stucco, pool area
- Blue paint on metal pipe, pool storage room
- Green pain ton wood door/door frame, community building
- Yellow paint on drywall, community building
- Blue paint on drywall, community building

During the removal and/or demolition of LCP/LBP components, follow the Federal, State, and Local regulations regarding the removal, and disposal of lead-containing materials.

Appendix 2 includes copies of the XRF readings.

Polychlorinated Biphenyls (PCBs) Sampling

Four (4) bulk samples of suspect PCB's containing building materials were collected during the assessment and analyzed for PCBs. Based on the laboratory analytical results of sample number HM-3, the black roofing materials contain Aroclor-1254 at concentrations of 1.2 milligrams per kilograms (mg/kg). The Environmental Protection Agency (EPA) standard is fifty (50) mg/kg. All other sampled materials are none detected for PCBs. Appendix 3 includes copies of the laboratory analytical results, and chain of custody.

Light Fixture Ballasts, Fluorescent Light Tubes and Exit Signs

Based on the limited visual inspections and observations during the assessment, the universal waste is present throughout the assessment area. The following were observed during the assessment:

- Approximately thirty-one (31) ballasts were observed during the assessment. Labels on the ballast were not observed during this limited assessment. EPA regulations require non-PCB containing light ballasts to be labeled "No PCBs" as of July 1, 1978. Prior to building demolition activities, all ballasts not labeled "No PCBs" must be either recycled or disposed of appropriately according to Federal, State and Local regulations.

- Approximately seventy (70), four (4) feet long fluorescent light tubes, forty (40) compact fluorescent lights (CFLs) and twenty (20) floodlights with possible mercury vapor were observed at the subject site during the assessment. Mercury vapor is assumed to be present in all fluorescent light tubes and should be removed, disposed and/or recycled properly when replacing/removing light fixtures. The disposal of fluorescent light tubes is also regulated and should be handled properly.

- Exit signs were not observed at the subject site during the assessment.

- Five (5) plastic paint buckets containing unknown substances were in the water heater room. Large containers with sodium hypochlorite and hydrochloric acid were observed in the "Acid" storage room.

2. Scope of Work

The scope of work for the assessment was as follows:

- Conduct pre-demolition asbestos, lead and polychlorinated biphenyls (PCB's) assessment at 2102 S. Flower Street in Santa Ana California,

- Collect a representative number of samples of suspect asbestos-containing materials (ACMs) and/or asbestos-containing construction materials (ACCMs) following the Environmental Protection Agency (EPA) guidelines. Asbestos bulk samples were analyzed using Polarized Light Microscopy (PLM) in accordance with the EPA method for the determination of asbestos in bulk building materials - EPA 600/R-93/116,

- Conduct a screening for suspect lead-based paint (LBP) and/or lead-containing paint (LCP) of accessible painted surfaces using X-ray fluorescence (XRF) analyzer,

- Collect samples of the building materials that are suspected of containing PCB's. The sampled materials were analyzed by EPA method 8082 for PCBs,

- Conduct a limited visual inspection and inventory of potential universal wastes, including PCBs in light fixtures ballasts, mercury vapor in light tubes and radioactive tritium gas in exit signs, and

- Prepare a written report, including a project summary, notes and analytical results.

3. Methods and Sampling Strategy

Asbestos Containing Materials

Visual Inspection

Accessible building materials were visually inspected using the methods presented in the EPA as a guideline. Demolition of building components was not performed to access hidden materials in wall cavities, sub-floors, or pipe chases. Consequently, unidentified ACMs/ACCMs such as pipe lagging may be hidden within the walls. Inaccessible ACMs/ACCMs do not pose a significant risk to building occupants if renovation, maintenance, or other physical activities do not disturb these materials.

Asbestos Sampling and Analysis

Bulk samples of suspect ACMs/ACCMs were collected from each homogeneous area[2]. The accessible areas were visually inspected for the presence of suspect materials. As materials were identified, bulk samples were obtained with the aid of a coring device or other hand tool and placed into individual sample containers. Each sample was given a discrete identification number and recorded on field notes as well as chain of custody forms. The sampled materials were analyzed using PLM techniques in accordance with a methodology approved by the EPA. As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%).

California Occupational Safety and Health Administration (Cal-OSHA) defines ACCM as those materials having an asbestos content of greater than one tenth of one percent (>0.1%) by weight.

When None Detected (ND) appears in this report, it should be interpreted as meaning no asbestos was observed in the sampled material above the reliable limit of detection for the PLM method.

Note: Under EPA assessment criteria, if a single sample of a homogeneous area tests positive for asbestos, then the entire homogeneous area is asbestos containing.

Lead Containing Materials

A visual inspection was conducted to identify potential LBP and/or lead-containing paint (LCP) on building components. The representative, suspect surface coatings were then measured on-site by X-ray fluorescence (XRF) Lead Spectrum Analyzer (Innov-X Olympus System with Serial Number 560920). An XRF Lead Spectrum Analyzer is a portable instrument to measure the paint coating without destructive sampling or paint removal.

The assessment was conducted in general accordance with the procedures specified in Chapter 7 of "Guidelines for the Evaluation and Control of LBP Hazards in Housing United States Department of Housing and Urban Development (HUD), which were used as a guideline during

[2] Homogenous area means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture. EPA, Part 763-Asbestos

this assessment. Calibration checks of the instrument were performed using a factory-supplied test block before and after each sampling activity. Calibration checks performed at the site were satisfactory, indicating the instrument was functioning properly.

In accordance with the California Code of Regulations (CCR) 1532.1 Lead, and Consumer Products Safety Commission (CPSC), and for the purpose of this assessment, the XRF measurement results were interpreted as follows:

- Lead concentrations of 1.0 mg/cm^2 or greater detected are components with LBP,
- Lead concentrations of 0.1 mg/cm^2 or greater up to 1.0 mg/cm^2 are considered LCP, and
- Lead concentration below 0.1 mg/cm^2 is not considered to contain lead-containing material on the surfaces tested.

A copy of the calibration report is included in appendix 2.

PCBs Bulk Materials

Sampling and Analytical Method

Accessible building materials were visually inspected for suspect materials. As materials were identified, bulk samples were obtained with the aid of a coring device or other hand tools and placed into individual sample containers. Each sample was given a discrete identification number and recorded on field notes as well as chain of custody forms. The sampled materials were analyzed for PCB using EPA method SW846-8082A.

Laboratory Analyses

Asbestos samples were submitted under chain of custody to Ecologics Laboratories (Ecologics) located at 2487 E. Orangethorpe Avenue in Fullerton, California (Tel: 714-632-8118). Ecologics is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 600190-0).

PCB samples were submitted under chain of custody to EMSL Analytical, Inc., (EMSL) located at 200 Route 130 in Cinnaminson, New Jersey (Tel: 856-858-4800). EMSL laboratory is accredited by the National Institute of Standards and Technology's (NIST), NVLAP, American Industrial Hygiene Association's (AIHA's) and Environmental Lead Laboratory Accreditation Program (ELLAP). Appendix 4 includes copies of the laboratory accreditation and inspectors' certifications.

4. Sample Results

Asbestos Containing Material

One hundred three (103) bulk samples of suspect ACMs/ACCMs were collected during the assessment. Table 1 provides a summary of the ACMs:

Table 1
Asbestos-Containing Materials (ACMs), August 2, 2024

Material Description	General Material Location	Asbestos content	Estimated Quantities (SF)
Gray rubberized mastic	Roof area, seams	2% Chrysotile	50
12"x12" gray vinyl floor tile with associated black/yellow mastic	Main lobby	2% Chrysotile	10
12"x12" blue vinyl floor tile with associated black/yellow mastic	Main lobby	3% Chrysotile	2,000
6" transite pipe	Roof stack	12% Chrysotile 3% Crocidolite	35

SF – Square Feet

The estimated quantities are based on a visual assessment and <u>shall not</u> be used for bidding purposes. The abatement contractor must field verify the quantities of the ACMs.

Lead Containing Materials

Based on the XRF measurements, Table 2 provides a summary of LBP:

Table 2
Summary of Positive XRF Reading Results (LBP), August 2, 2024

Paint Color	Components	Reading location	Result mg/cm^2
Silver	HVAC exhaust	Roof	5.0
Blue	Flashing	Roof	2.33-4.03
Brown	Wall	12”x12” porcelain tile, women’s restroom, pool area	4.98-5.0
White	Wall	12”x12” porcelain tile, women’s restroom, pool area	4.77-4.98

Approximately three hundred and five (305) square feet of LBP was identified during the assessment.

The estimated quantities are based on a visual assessment and <u>shall not</u> be used for bidding purposes. The abatement contractor must field verify the quantities of the LBPs.

Table 3 provides a summary of LCP:

Table 3
Summary of Positive XRF Reading Results (LCP), August 2, 2024

Paint Color	Components	Reading location	Result mg/cm^2
White	Wall	Exterior stucco, pool area	0.02
Blue	Wall	Exterior stucco, pool area	0.01-0.03
White/gray	Exhaust vent	Maintenance room, pool area	0.1-0.23
Light blue	Floor	6”x6” tiles, pool area	0.15
White	Floor	1”x1” tile, pool area	0.04-0.22
Black	Floor	6”x6” tiles, pool area	0.14-0.23
Dark blue	Floor	6”x6” tile, pool area	0.10-0.43
White	Floor	6”x6” tile, pool edge	0.11-0.20
Brown	Door frame	Community building	0.10-0.12
Blue	Gate	Women’s restroom	0.32-0.48
White	Wall	Women’s restroom, drywall	0.01-0.13
White	Wall	Women’s restroom, brick	0.04-0.24
Multi-color	Floor	Women’s restroom, pool area	0.02-0.03
White	Stalls/Urinals	Throughout restroom	0.22-0.29
Blue	Wall	Pool area, brick wall	0.01-0.02
Multi-color	Wall	Mural wall, pool area	0.22-0.28
Blue	Pipe	Pool storage room, metal pipe	0.05-0.12
Green	Door/door frame	Community building	0.04-0.32
Yellow	Wall	Community building, drywall	0.12-0.14
Blue	Wall	Community building, drywall	0.23-0.54

During the removal and/or demolition of LCP/LBP components, follow the Federal, State, and Local regulations regarding the removal, and disposal of lead-containing materials.

Polychlorinated Biphenyls

Four (4) bulk samples of suspect PCB's containing building materials were collected during the assessment and analyzed for PCB. Table 4 provides a summary of the material with PCBs presence in concentrations below the EPA standard of 50 mg/kg:

Table 5 - Summary of PCBs <50 mg/kg, August 2, 2024

Material Description	General Material Location	Results Aroclor-mg/kg
Black roofing material	Throughout roofs	1254 – 1.2

Based on the laboratory analytical results PCBs were not detected in the other sampled materials.

5. Regulatory Requirements

Asbestos Containing Materials

Asbestos Definition

Asbestos-Containing Material (ACM) is defined as any material containing more than one percent (>1%) asbestos. EPA and OSHA.

Asbestos-Containing Construction Material (ACCM) is defined as any manufactured construction material, which contains more than 1/10th of 1% asbestos by weight (>0.1). Cal-OSHA.

Summary of Asbestos Regulations

- Any individual who contracts to provide health and safety services relating to ACM and ACCM must be certified by Cal-OSHA as either a Certified Asbestos Consultant or a Site Surveillance Technician. The activities they are certified to provide include conducting asbestos surveys; writing work plans or specifications for abatement; monitoring the work of abatement contractors; collecting air samples; and determining if the work area is safe for re-occupancy by non-asbestos workers. Regulation: Cal-OSHA 8 CCR 1529 (q) (1).

- Notify employees, tenants, and contractors who perform work in the building of the presence, locations, and quantities of asbestos in accordance with California Health and Safety Code Section 25915 and Proposition 65, California (8 CCR 1529 (k)) and Federal OSHA (1926.1101) regulations.

- To ascertain that all hidden materials are identified, additional destructive sampling may be conducted during the renovation or demolition of the building. Regulation: National Emission Standards for Hazardous Air Pollutants {NESHAPS – 40 CFR Part 61} as authorized by the Clean Air Act.

- If more than 100 square feet of materials that contain greater than 0.1% asbestos will be removed, the materials must be removed by a registered asbestos abatement contractor. Regulation: Cal-OSHA 8 CCR 1529 (R).

- If ACM, ACCM and/or suspect ACMs are disturbed and/or impacted, follow all the Federal, State, and Local regulations.

Lead Containing Materials

Lead Definition

Lead-Based Paint (LBP) refers to paint or other surface coating that contains an amount of lead equal to, or more than of 0.5% or more lead by weight. Title 10, Department of Housing and Urban Development (HUD) Title 17, California Code of Regulations.

Lead-Containing Paint (LCP) is any detectable amount of paint above the laboratory detection limit, but less than 0.5% lead by weight. California Code of Regulations, Title 8 Section 1532.1. Lead.

Summary of Lead Regulations

- The Contractor shall manage waste streams and perform all appropriate waste stream testing as required by the appropriate regulations and the selected landfills. The Contractor shall collect composite and representative samples per waste stream. Testing shall include, but is not limited to, Total Threshold Limit Concentration (TTLC), Soluble Threshold Limit Concentrations (STLC), Toxicity Characteristic Leaching Procedure (TCLP), and any other assessment deemed necessary by the disposal facility. Waste stream testing shall be completed for each identified waste stream and additionally for identified waste streams that may be discovered during the work.

- Federal Occupational Health and Safety Administration (OSHA) as well as Cal-OSHA regulate all worker exposure during construction activities that impact LCP. California OSHA enforces the Lead in Construction Standard in Title 8 CCR 1532.1. The scope covers construction work where employees may be exposed to lead during such activities as demolition, removal, and surface preparation for re-painting, renovation, cleanup, and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing and equipment, housekeeping, hygiene facilities, medical surveillance, and training, among other requirements.

- California Department of Public Health (CDPH) has developed regulations for accreditation, certification, and work practices for lead-based paint and lead hazards (Title 8 CCR, Division 1 Chapter 8).

- EPA's Lead Renovation, Repair and Painting Rule (RRP Rule) requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, childcare facilities, and schools built before 1978 must have their firm certified by EPA (or an EPA-authorized state) and use certified renovators who are trained by EPA-approved training providers and follow lead-safe work practices.

PCB Containing Bulk Materials

Polychlorinated Biphenyls (PCBs) are man-made organic chemicals. The materials were banned from manufacture in the United States in 1977. Removal, storage, and disposal of PCBs containing materials are subject to EPA regulations**,** Title 40 of the Code of Federal Regulations (CFR), part 761. PCBs are regulated by Federal and State of California rules under the Resource Conservation and recovery Act (RCRA) and the Toxic Substances Control Act (TSCA).

Light Fixture Ballasts, Fluorescent Light Tubes and Exit Signs

EPA regulations require non-PCB containing light ballasts are required to be labeled "No PCBs" as of July 1, 1978. Prior to building demolition activities, all ballasts not labeled "No PCBs" must be either recycled or disposed of appropriately according to Federal, State and Local regulations.

Mercury vapor is assumed to be present in all fluorescent light tubes and should be removed, disposed and/or recycled properly when replacing, fixtures. The disposal of fluorescent light tubes is also regulated and should be handled properly.

Exit signs that glow green or red in the dark often contain a radioactive gas called tritium. These signs do not require electricity or batteries for power. Exit signs with tritium gas are regulated and must be either recycled or disposed of appropriately according to Federal, State and Local regulations.

6. Recommendations

Omega recommends the following:

- A California-licensed asbestos contractor shall remove the ACMs prior to any construction/demolition activities,
- During the removal and/or demolition of LBP/LCP components, follow the Federal, State and Local regulations regarding the removal and disposal of lead-containing materials,
- During construction/demolition activities, materials may be uncovered that are different from those accessible for sampling during this assessment. Personnel in charge of construction/demolition should be alerted to note materials uncovered during these activities, which differ from those included in this assessment. If suspect material is discovered, additional sampling should be performed to determine if the materials contain asbestos and/or lead,
- Prior to any construction/demolition activity at the subject site, all light ballasts and light tubes which were inaccessible or required destructive inspection should be examined and properly removed, packaged, labeled, manifested, and transported to an EPA approved facility for recycling or proper disposal, and
- Retain a qualified environmental consultant to conduct monitoring and clearances during and post abatement of the regulated ACMs to document and verify removal.

7. Limitations

Our services consist of professional opinions and recommendations that are made in accordance with generally accepted consulting standards, principles and practices. Reasonable attempts have been made to ensure that the report is complete and accurate with respect to Omega's authorized scope of work. Omega assumes no liability for damages, which might result from errors contained in the report or conditions, which the report fails to disclose. The quantity of samples, sample locations, and analyses performed were selected to provide analytical data to document and evaluate current site conditions. The reporting of bulk analytical results is presented as estimates resulting from analysis by EPA-approved methods.

During construction/renovation activities, materials may be uncovered that are different from those accessible for sampling during this assessment. If suspect material is found, additional sampling should be performed to determine if the material contain asbestos and/or lead.

The estimated quantities are based on a visual inspection during the assessment and should not be used for bidding purposes. These materials may be present throughout inaccessible areas of the floor, the abatement contractor must field verify the amount of estimated square footages.

Appendix 1

Asbestos Sample Results Table, Field Maps with General Sample Locations, Laboratory Analytical Results and Chain of Custody

ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
1A	Yellow carpet mastic	NQ	G	E	N	N. learning center, south				X
1B			G	E	N	N. learning center, center				X
1C			G	E	N	South office center				X
2A	Black base cove with associated yellow mastic	NQ	G	E	N	N. learning center east wall				X
2B			G	E	N	South office west wall				X
2C			G	E	N	Center hallway east wall				X
3A	White base cove with associated yellow mastic	NQ	G	E	N	Main lobby north wall				X
3B			G	E	N	Center hallway west wall				X
3C			G	E	N	Center hallway east wall				X
4A	Black hockey puck ceiling tile mastic	NQ	G	M	N	E. wall top side at graphic				X
4B			G	M	N	Main hallway east				X
4C			G	M	N	Main hallway west				X
5A	Drywall/joint compound	NQ	G	E	N	N. learning center west wall				X
5B			G	E	N	South office east wall				X
5C			G	E	N	Center hallway south wall				X
5D			G	E	N	Main lobby west wall				X
5E			G	E	N	Main lobby west wall next to vending machine				X

**Asbestos-Containing Material (ACM): Any material containing more than one percent (1%) asbestos.*
Asbestos-Containing Construction Material (ACCM): Any manufactured construction material, which contains more than 1/10th of 1% asbestos by weight.
All unidentified materials should be treated as ACMs in accordance with Cal-OSHA Title 8 CCR 1529 Asbestos, until they are sampled and analyzed for asbestos.

Analysis performed in accordance with EPA Protocol for asbestos using polarized light microscopy (PLM). Analytical detection limit = 1%

NA = Not analyzed
NAD = No Asbestos Detected
NQ = Not Quantified
SF = Square Feet
LF = Linear Feet

Acc = Accessibility
Con = Condition
G = Good
F = Fair

Fri = Friability
S = Staff Only
M = Moderate
E = Easy

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N = Non-Friable
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Amo = Amosite
Chr = Chrysotile
Cro = Crocidolite

ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
6A	12”x12” white pin-hole ceiling tile	NQ	G	M	F	Hallway towards pool entrance, east				X
6B			G	M	F	Hallway towards pool entrance, center				X
6C			G	M	F	Hallway towards pool entrance, west				X
7A	12”x12” white ceiling tile fissured texture	NQ	G	M	F	Main lobby east				X
7B			G	M	F	Main lobby center				X
7C			G	M	F	Main lobby west				X
8A	Concrete pad	NQ	G	E	N	Pool deck outer area west center				X
8B			G	E	N	Pool deck area NW				X
8C			G	E	N	Pool deck area north				X
8D			G	E	N	Pool deck area NE				X
8E			G	E	N	Pool deck area east				X

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ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
9A	Asphalt black	NQ	G	E	N	Exterior asphalt, south				X
9B			G	E	N	Exterior asphalt, SW				X
9C			G	E	N	Exterior asphalt, west				X
9D			G	E	N	Exterior asphalt, NW				X
9E			G	E	N	Exterior asphalt, north				X
9F			G	E	N	Exterior asphalt, NE				X
9G			G	E	N	Exterior asphalt, east				X
10A	Gray hockey puck mastic	NQ	G	M	N	Main lobby ceiling east				X
10B			G	M	N	Main lobby ceiling center				X
10C			G	M	N	Main lobby ceiling west				X
11A	12”x12” tile pinhole double layered	NQ	G	E	F	Main lobby wall at graphic south				X
11B			G	E	F	Main lobby wall at graphic center				X
11C			G	E	F	Main lobby wall at graphic north				X
12A	Gray rubberized mastic*	50	G	E	N	Seams where rolled roofing meets stucco elevated roof center		2		
12B			G	E	N	Seams where rolled roofing meets stucco elevated roof, east		2		
12C			G	E	N	Seams where rolled roofing meets stucco elevated roof, west		2		
13	Void					Void				

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ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
14A	Black roofing materials, core	NQ	G	S	N	Roof, SE				X
14B			G	S	N	Roof south center				X
14C			G	S	N	Roof center				X
14D			G	S	N	Roof north center				X
14E			G	S	N	Elevated roof south				X
14F			G	S	N	Elevated roof center				X
14G			G	S	N	Elevated roof north				X
15A	Roof felt	NQ	G	S	N	Equipment storage roof south				X
15B			G	S	N	Equipment storage roof center				X
15C			G	S	N	Equipment storage roof north				X
16A	Black roof seam mastic on flashing	NQ	G	S	N	Elevated roof perimeter east				X
16B			G	S	N	Elevated roof perimeter center				X
16C			G	S	N	Elevated roof perimeter west				X
17A	Black penetration mastic	NQ	G	S	N	Roof at south exhaust				X
17B			G	S	N	Roof at center exhaust				X
17C			G	S	N	Roof at east exhaust				X
18A	Concrete slab at pool edges	NQ	G	E	N	Pool edge south				X
18B			G	E	N	Pool edge west				X
18C			G	E	N	Pool edge north				x

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ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
19A	White plaster	NQ	G	E	N	Pool interior wall east				X
19B			G	E	N	Pool interior wall north				X
19C			G	E	N	Pool interior wall NE				X
19D			G	E	N	Pool interior wall NW				X
19E			G	E	N	Pool interior wall west				X
19F			G	E	N	Pool interior wall SW				X
19G			G	E	N	Pool interior wall south				X
20A	12”x12” gray vinyl floor tile with associated black/yellow mastic*	10	G	E	N	Main lobby center		2		
20B			G	E	N	Main lobby center		2		
20C			G	E	N	Main lobby center		2		
21A	12”x12” blue vinyl floor tile with associated black/yellow mastic*	2,000	G	E	N	Main lobby south		3		
21B			G	E	N	Main lobby center		3		
21C			G	E	N	Main lobby north		3		
21D			G	E	N	Main lobby north		3		
21E			G	E	N	Main lobby south		3		
22A	Grout associated with ceramic tile	NQ	G	E	N	Exterior pool area, south				X
22B			G	E	N	Exterior pool area, west				X
22C			G	E	N	Exterior pool area, north				X

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ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
23A	Red brick	NQ	G	E	N	Exterior south				X
23B			G	E	N	Exterior west				X
23C			G	E	N	Exterior north				X
23D			G	E	N	Pool pump room, exterior east				X
23E			G	E	N	Pool pump room, exterior west				X
23F			G	E	N	Pool area west planters north				X
23G			G	E	N	Pool area west planters south				X
24A	Grout associated with brick	NQ	G	E	N	Exterior east				X
24B			G	E	N	Exterior west				X
24C			G	E	N	Exterior north				X
25A	Grout associated with 4”x4” white ceramic tile	NQ	G	E	N	Pool area floor at white ceramic tile design				X
25B			G	E	N	Pool area floor at white ceramic tile design				X
25C			G	E	N	Pool area floor at white ceramic tile design				X
26A	Gray plaster	NQ	G	E	N	Maintenance room northwest wall				X
26B			G	E	N	Maintenance room northeast wall				X
26C			G	E	N	Maintenance room northeast wall				X

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ASBESTOS BULK SAMPLE ANALYTICAL RESULTS
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	Estimated Amount SF	Assessment			General Sample Location	Estimated % Asbestos			
			CON	ACC	FRI		AMO	CHR	CRO	NAD
27A	Skim coat, multi-color stucco	NQ	G	E	N	Exterior north				X
27B			G	E	N	Exterior west				X
27C			G	E	N	Exterior pool area NW				X
27D			G	E	N	Exterior west center				X
27E			G	E	N	Exterior south				X
28A	6” transite pipe*	35	G	S	N	South roof stack		12	3	

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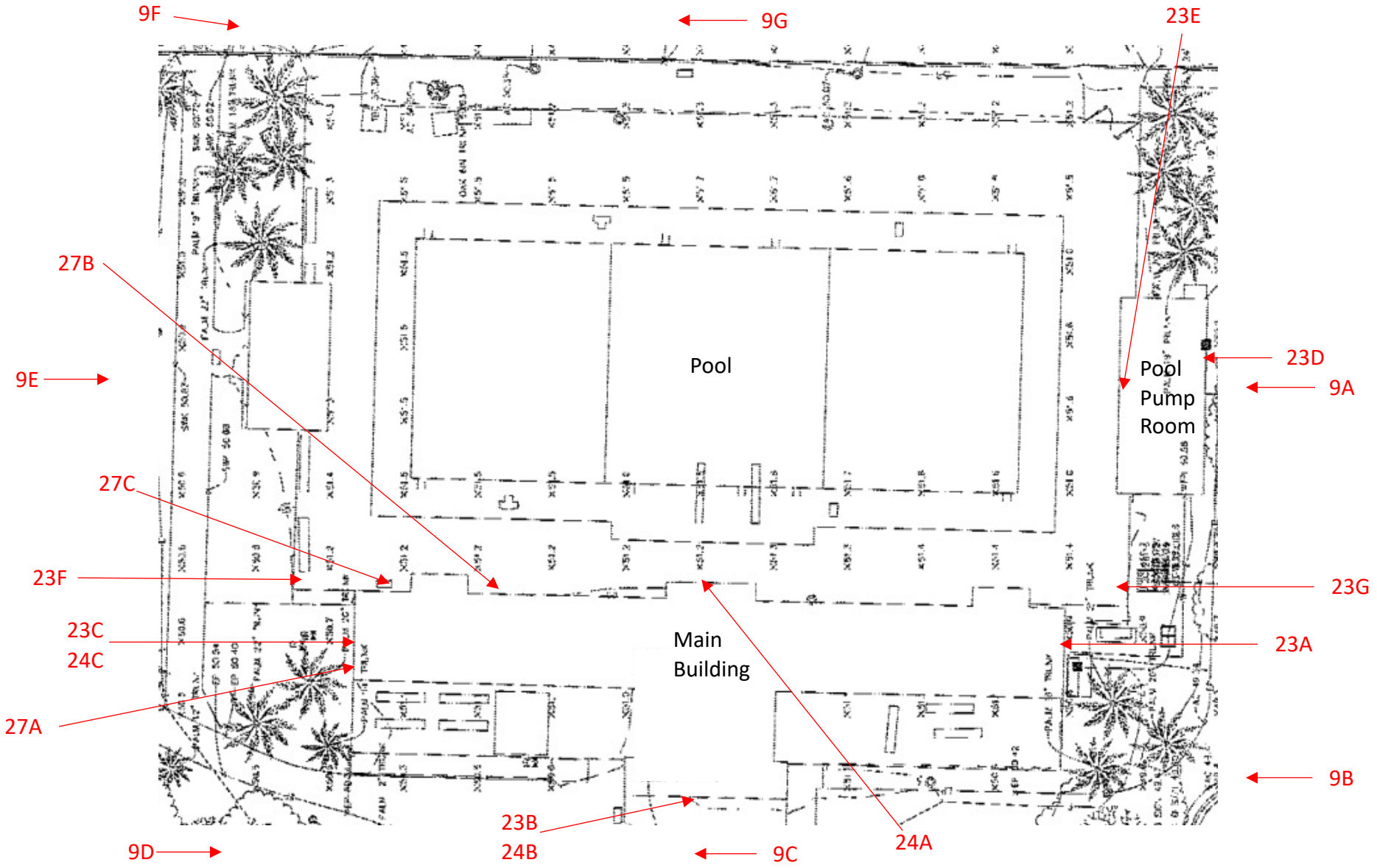
PLM Sample Locations: Exterior



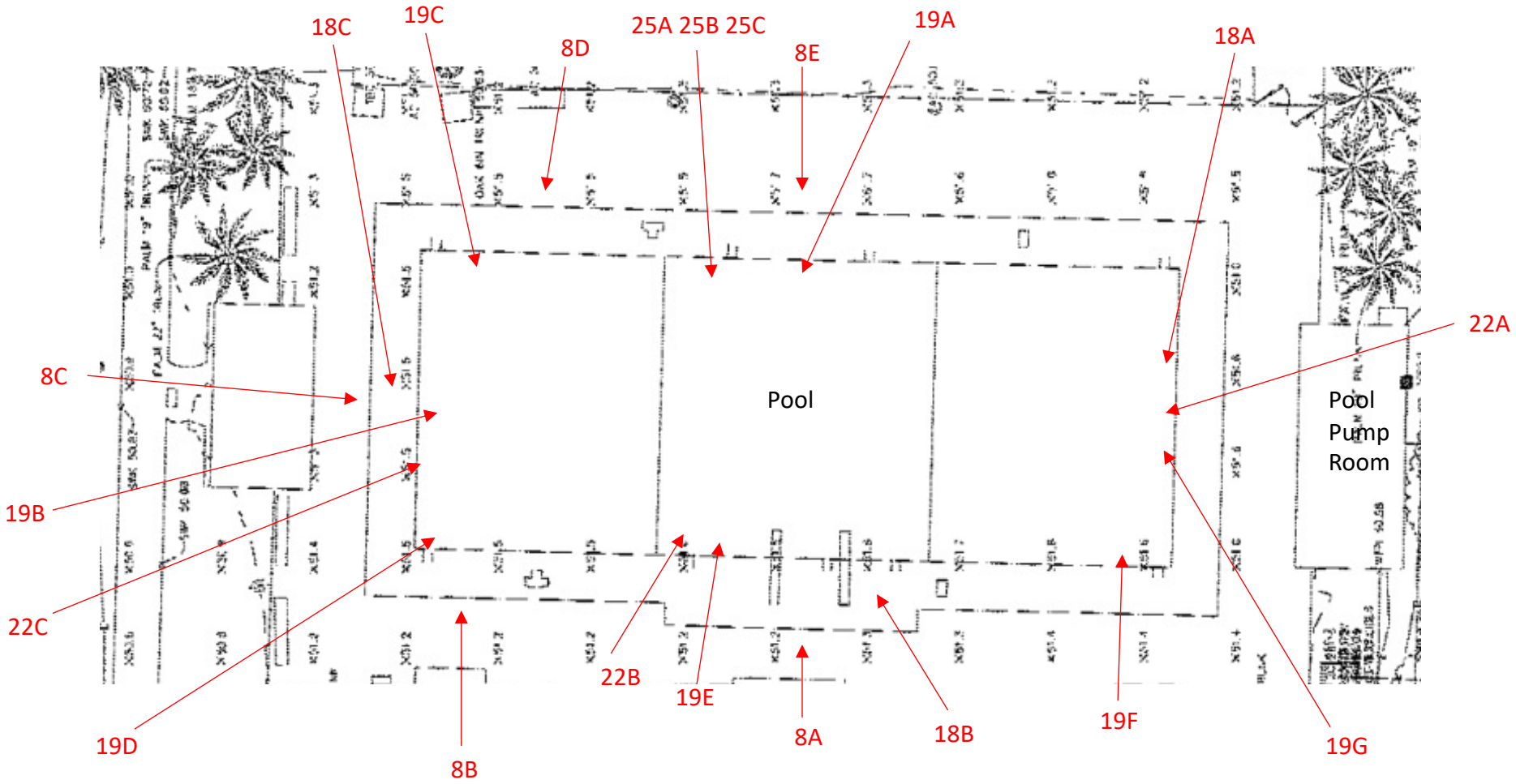
Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Pool



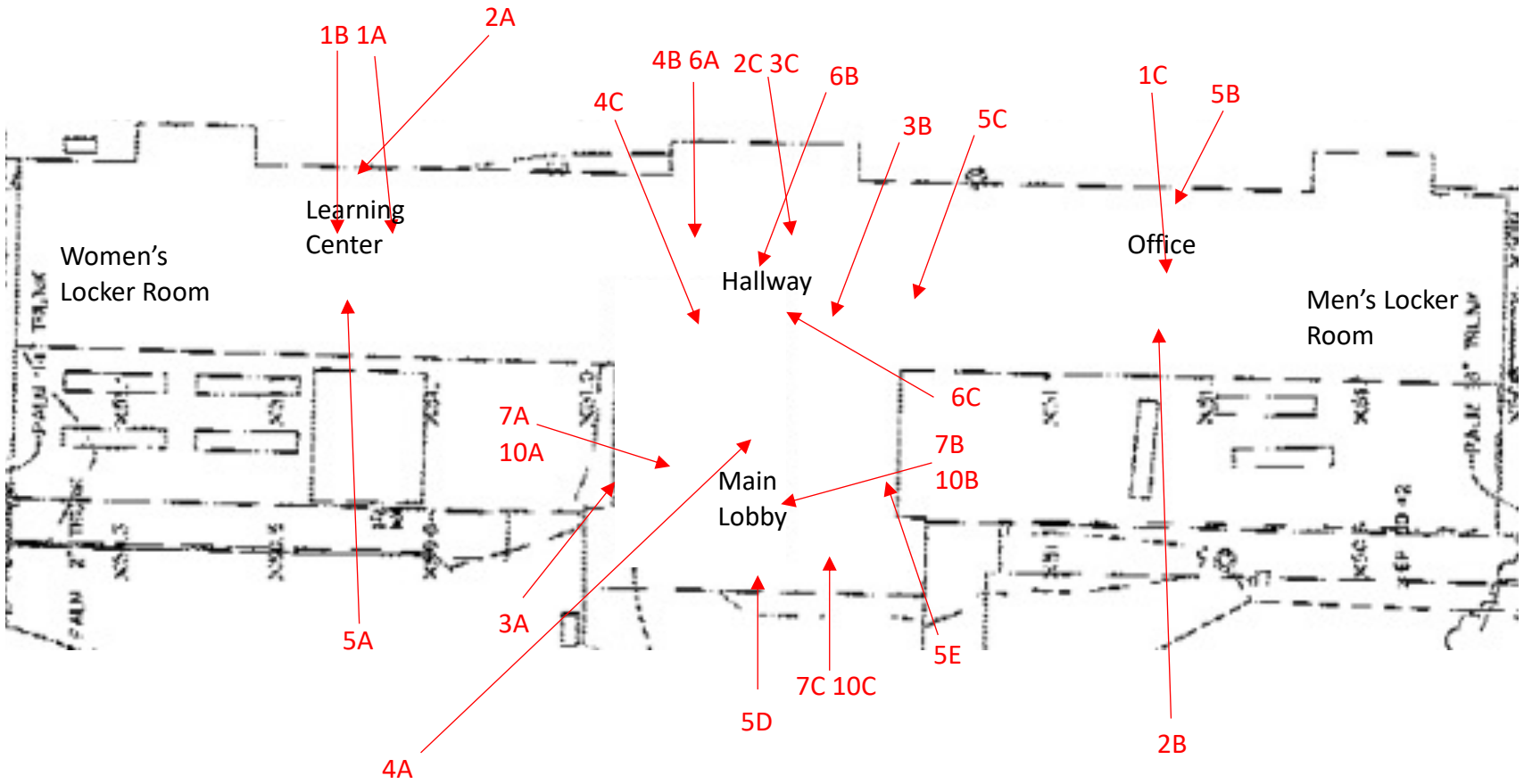
Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Interior



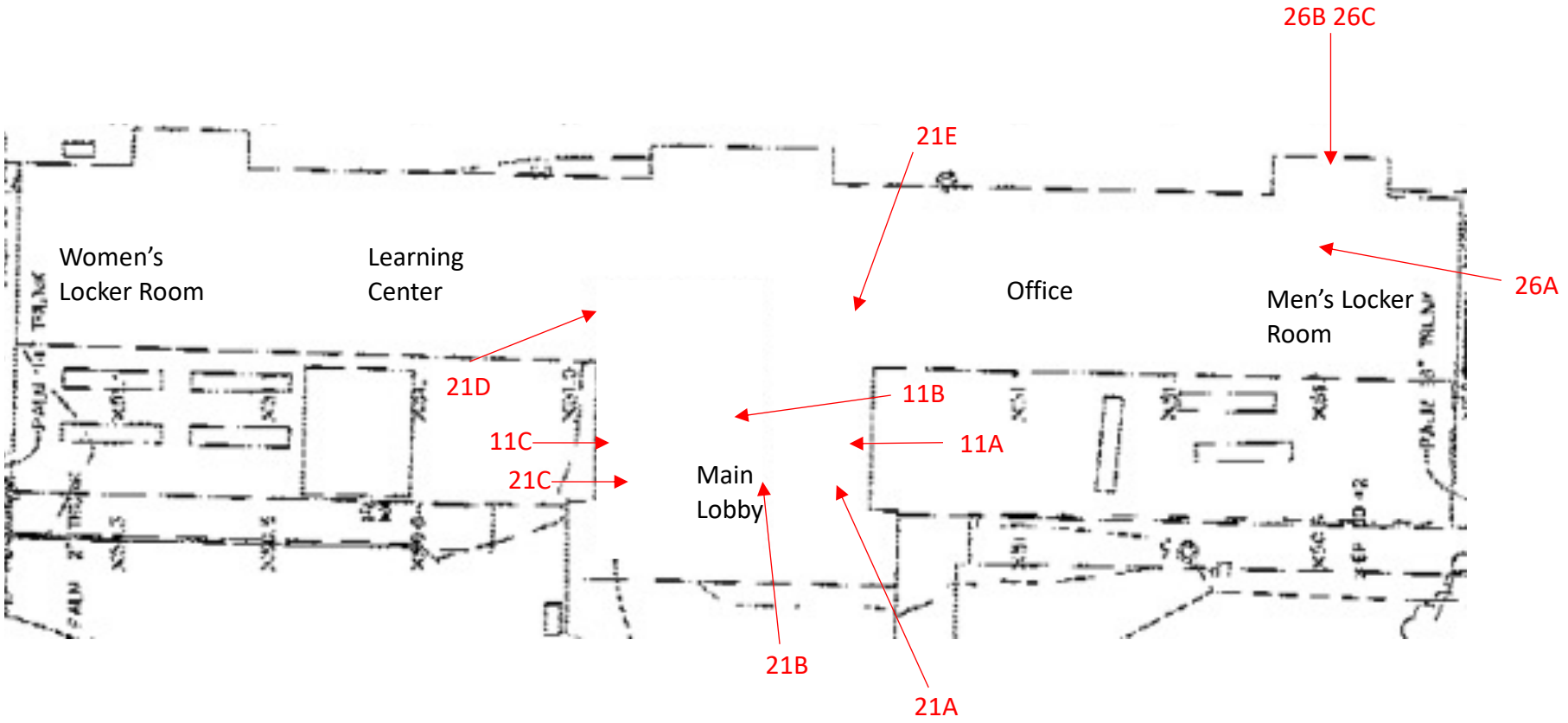
Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Interior



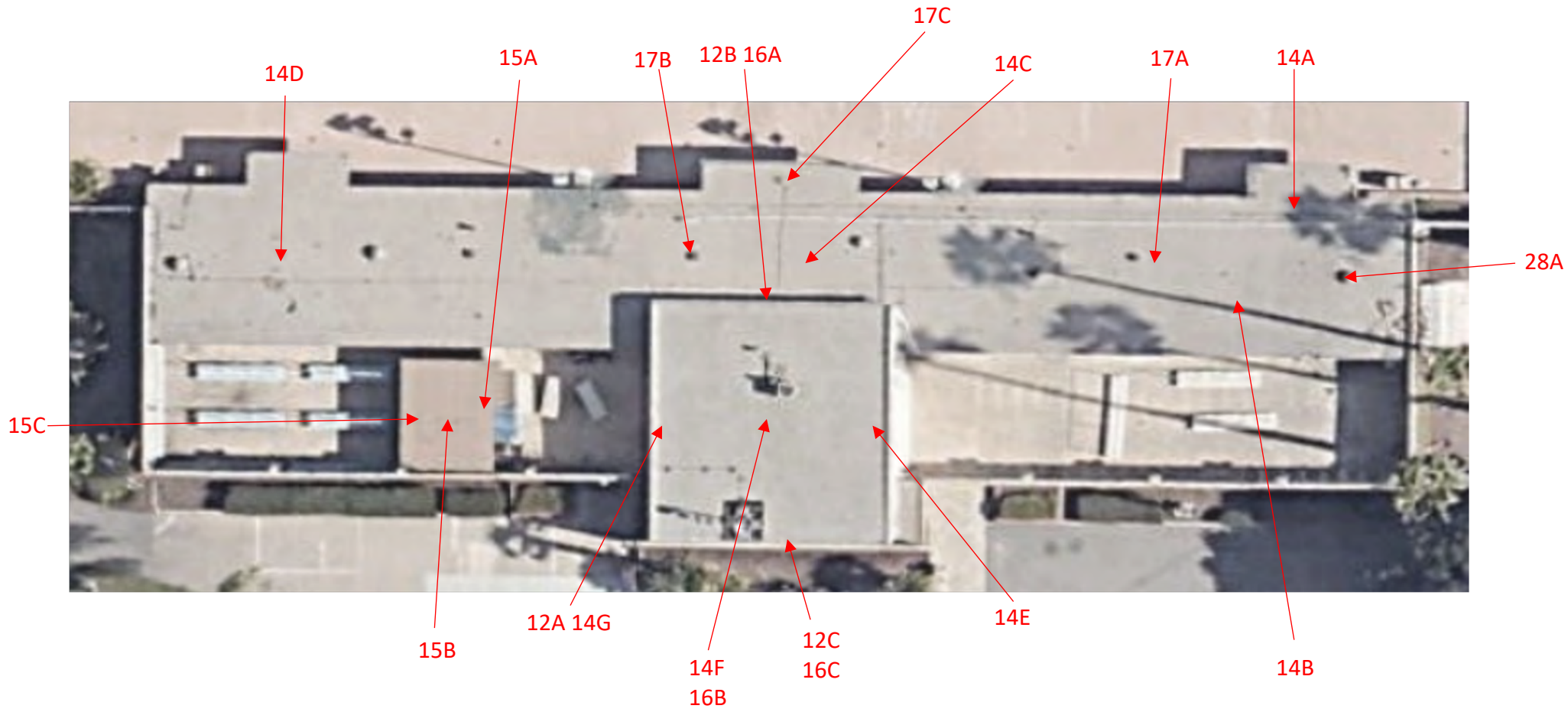
Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Roof



Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

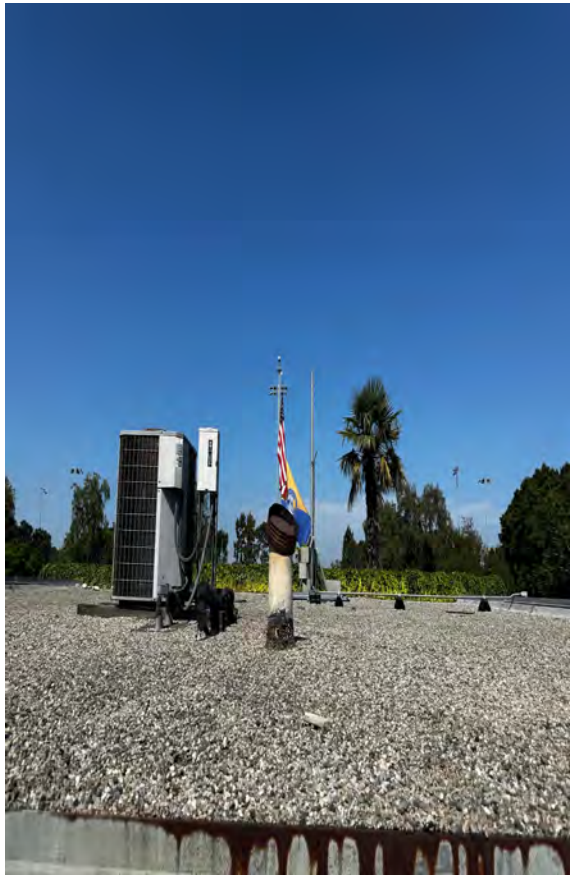
N

Asbestos-Containing Materials Photo Log
2102 S. Flower street
Santa Ana, California 92703

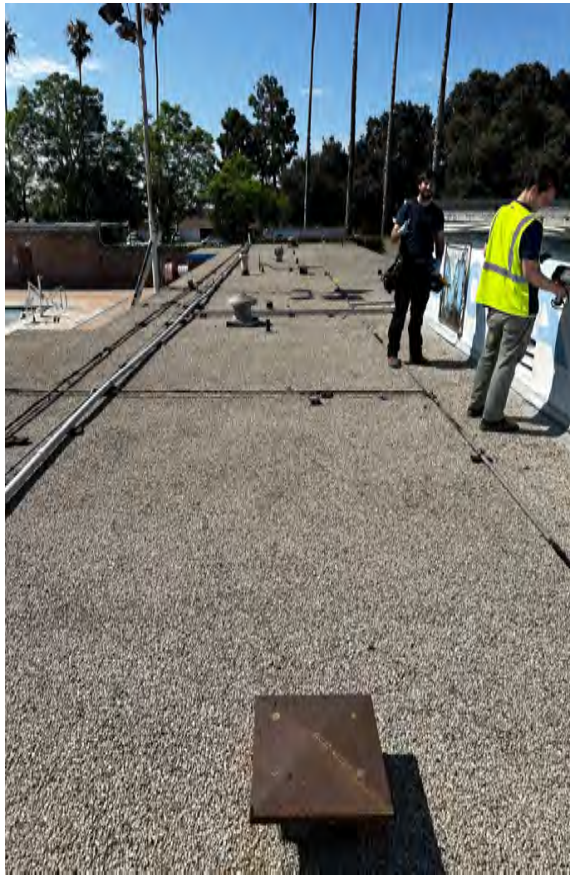
12”x12” gray vinyl floor tile &
associated black mastic

12”x12” blue vinyl floor tile &
associated black mastic

Asbestos-Containing Materials Photo Log
2102 S. Flower street
Santa Ana, California 92703



Transite pipe



Gray rubberized mastic at seams

Ecologics Laboratories
2487 E. Orangethorpe Ave.
Fullerton, CA 92831
(714) 632-8118
www.ecologicslab.com

PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
1A	240802044.01.A	240802044.01		
Location : North Learning Center South **Analyst Description / Color** : Carpet Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
1B	240802044.02.A	240802044.02		
Location : North Learning Center Center **Analyst Description / Color** : Carpet Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
1C	240802044.03.A	240802044.03		
Location : South Office Center **Analyst Description / Color** : Carpet Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
2A	240802044.04.A	240802044.04		
Location : North Learning Center East Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
2A	240802044.04.B	240802044.04		
Location : North Learning Center East Wall **Analyst Description / Color** : Mastic, Homogeneous, Gummy, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

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# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
2B	240802044.05.A	240802044.05		
Location : South Office West Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
2B	240802044.05.B	240802044.05		
Location : South Office West Wall **Analyst Description / Color** : Mastic, Homogeneous, Gummy, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
2C	240802044.06.A	240802044.06		
Location : Center Hallway East Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
2C	240802044.06.B	240802044.06		
Location : Center Hallway East Wall **Analyst Description / Color** : Mastic, Homogeneous, Gummy, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
3A	240802044.07.A	240802044.07		
Location : Main Lobby North Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
3A	240802044.07.B	240802044.07		
Location : Main Lobby North Wall **Analyst Description / Color** : Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
3B	240802044.08.A	240802044.08		
Location : Center Hallway West Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
3B	240802044.08.B	240802044.08		
Location : Center Hallway West Wall **Analyst Description / Color** : Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
3C	240802044.09.A	240802044.09		
Location : Center Hallway East Wall **Analyst Description / Color** : Base Cove, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
3C	240802044.09.B	240802044.09		
Location : Center Hallway East Wall **Analyst Description / Color** : Mastic, Firm, Homogeneous, Yellow **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
4A	240802044.10.A	240802044.10		
Location : East Wall Top Side at Graphic **Analyst Description / Color** : Mastic, Firm, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
4B	240802044.11.A	240802044.11		
Location : Main Hallway East **Analyst Description / Color** : Mastic, Firm, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
4C	240802044.12.A	240802044.12		
Location : Main Hallway West (Found Under All Ceiling Tiles) **Analyst Description / Color** : Mastic, Firm, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
5A	240802044.13.A	240802044.13		
Location : North Learning Center West Wall **Analyst Description / Color** : Joint Compound, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
5A	240802044.13.B	240802044.13		
Location : North Learning Center West Wall **Analyst Description / Color** : Drywall, Fibrous, Granular, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 10% Cellulose, 2% Fiberglass, 88% Non-Fibrous Material			No	NAD
Comments:				

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
5B	240802044.14.A	240802044.14		
Location : South Office East Wall **Analyst Description / Color** : Joint Compound, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
5B	240802044.14.B	240802044.14		
Location : South Office East Wall **Analyst Description / Color** : Drywall, Fibrous, Granular, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 10% Cellulose, 2% Fiberglass, 88% Non-Fibrous Material			No	NAD
Comments:				
5C	240802044.15.A	240802044.15		
Location : Center Hallway South Wall **Analyst Description / Color** : Joint Compound, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
5C	240802044.15.B	240802044.15		
Location : Center Hallway South Wall **Analyst Description / Color** : Drywall, Fibrous, Granular, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 10% Cellulose, 2% Fiberglass, 88% Non-Fibrous Material			No	NAD
Comments:				
5D	240802044.16.A	240802044.16		
Location : Main Lobby West Wall **Analyst Description / Color** : Joint Compound, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
5D	240802044.16.B	240802044.16		
Location : Main Lobby West Wall **Analyst Description / Color** : Drywall, Fibrous, Granular, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 10% Cellulose, 2% Fiberglass, 88% Non-Fibrous Material			No	NAD
Comments:				
5E	240802044.17.A	240802044.17		
Location : Main Lobby Wall Next to Vending Machine **Analyst Description / Color** : Joint Compound, Firm, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
5E	240802044.17.B	240802044.17		
Location : Main Lobby Wall Next to Vending Machine **Analyst Description / Color** : Drywall, Fibrous, Granular, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 10% Cellulose, 2% Fiberglass, 88% Non-Fibrous Material			No	NAD
Comments:				
6A	240802044.18.A	240802044.18		
Location : Hallway Towards Pool Entrance East **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 80% Cellulose, 20% Non-Fibrous Material			No	NAD
Comments:				
6B	240802044.19.A	240802044.19		
Location : Hallway Towards Pool Entrance Center **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 80% Cellulose, 20% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
6C	240802044.20.A	240802044.20		
Location : Hallway Towards Pool Entrance West **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Brown, White **Asbestos Type** : **NONE** **Other Material Type** : 80% Cellulose, 20% Non-Fibrous Material			No	NAD
Comments:				
7A	240802044.21.A	240802044.21		
Location : Main Lobby East **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 25% Cellulose, 20% Fiberglass, 55% Non-Fibrous Material			No	NAD
Comments:				
7B	240802044.22.A	240802044.22		
Location : Main Lobby Center **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 25% Cellulose, 20% Fiberglass, 55% Non-Fibrous Material			No	NAD
Comments:				
7C	240802044.23.A	240802044.23		
Location : Main Lobby West **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 25% Cellulose, 20% Fiberglass, 55% Non-Fibrous Material			No	NAD
Comments:				
8A	240802044.24.A	240802044.24		
Location : Pool Deck Outer Area West Center **Analyst Description / Color** : Concrete, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
8B	240802044.25.A	240802044.25		
Location : Pool Deck Area NW **Analyst Description / Color** : Concrete, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
8C	240802044.26.A	240802044.26		
Location : Pool Deck Area North **Analyst Description / Color** : Concrete, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
8D	240802044.27.A	240802044.27		
Location : Pool Deck Area NE **Analyst Description / Color** : Concrete, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
8E	240802044.28.A	240802044.28		
Location : Pool Deck Area East **Analyst Description / Color** : Concrete, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
9A	240802044.29.A	240802044.29		
Location : Ext South **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
9B	240802044.30.A	240802044.30		
Location : Ext SW **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
9C	240802044.31.A	240802044.31		
Location : Ext West **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
9D	240802044.32.A	240802044.32		
Location : Ext NW **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
9E	240802044.33.A	240802044.33		
Location : Ext North **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
9F	240802044.34.A	240802044.34		
Location : Ext NE **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
9G	240802044.35.A	240802044.35		
Location : Ext East **Analyst Description / Color** : Asphalt, Granular, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
10A	240802044.36.A	240802044.36		
Location : Main Lobby Horizontal Ceiling East **Analyst Description / Color** : Mastic, Homogeneous, Gummy, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
10B	240802044.37.A	240802044.37		
Location : Main Lobby Horizontal Ceiling Center **Analyst Description / Color** : Mastic, Homogeneous, Gummy, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
10C	240802044.38.A	240802044.38		
Location : Main Lobby Horizontal Ceiling West **Analyst Description / Color** : Mastic, Homogeneous, Gummy, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
11A	240802044.39.A	240802044.39		
Location : Main Lobby Vertical Ceiling at Graphic South **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Black, Blue, Gray **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
11B	240802044.40.A	240802044.40		
Location : Main Lobby Vertical Ceiling at Graphic Center **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Black, Blue, Gray **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
11C	240802044.41.A	240802044.41		
Location : Main Lobby Vertical Ceiling at Graphic North **Analyst Description / Color** : Ceiling Tile, Fibrous, Homogeneous, Black, Blue, Gray **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
12A	240802044.42.A	240802044.42		
Location : Seams Where Rolled Roofing Meets Stucco, Center Elevated Roof Center **Analyst Description / Color** : Mastic w/ Sealant, Non-Homogeneous, Gummy, Tarry, Black, Silver, Tan **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				
12B	240802044.43.A	240802044.43		
Location : Seams Where Rolled Roofing Meets Stucco, Center Elevated Roof East **Analyst Description / Color** : Mastic w/ Sealant, Non-Homogeneous, Gummy, Tarry, Black, Silver, Tan **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				
12C	240802044.44.A	240802044.44		
Location : Seams Where Rolled Roofing Meets Stucco, Center Elevated Roof West **Analyst Description / Color** : Mastic w/ Sealant, Non-Homogeneous, Gummy, Tarry, Black, Silver, Tan **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
14A	240802044.45.A	240802044.45		
Location : Roof SE **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14A	240802044.45.B	240802044.45		
Location : Roof SE **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
14A	240802044.45.C	240802044.45		
Location : Roof SE **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
14B	240802044.46.A	240802044.46		
Location : Roof South Center **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14B	240802044.46.B	240802044.46		
Location : Roof South Center **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
14B	240802044.46.C	240802044.46		
Location : Roof South Center **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
14C	240802044.47.A	240802044.47		
Location : Roof Center **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14C	240802044.47.B	240802044.47		
Location : Roof Center **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
14C	240802044.47.C	240802044.47		
Location : Roof Center **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
14D	240802044.48.A	240802044.48		
Location : Roof North Center **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
14D	240802044.48.B	240802044.48		
Location : Roof North Center **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
14D	240802044.48.C	240802044.48		
Location : Roof North Center **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
14E	240802044.49.A	240802044.49		
Location : Elevated Roof South **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14E	240802044.49.B	240802044.49		
Location : Elevated Roof South **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
14E	240802044.49.C	240802044.49		
Location : Elevated Roof South **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
14F	240802044.50.A	240802044.50		
Location : Elevated Roof Center **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14F	240802044.50.B	240802044.50		
Location : Elevated Roof Center **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
14F	240802044.50.C	240802044.50		
Location : Elevated Roof Center **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
14G	240802044.51.A	240802044.51		
Location : Elevated Roof North **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 15% Cellulose, 85% Non-Fibrous Material			No	NAD
Comments:				
14G	240802044.51.B	240802044.51		
Location : Elevated Roof North **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
14G	240802044.51.C	240802044.51		
Location : Elevated Roof North **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Fiberglass, 40% Non-Fibrous Material			No	NAD
Comments:				
15A	240802044.52.A	240802044.52		
Location : Equipment Storage Roof South **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
15A	240802044.52.B	240802044.52		
Location : Equipment Storage Roof South **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black, Brown **Asbestos Type** : **NONE** **Other Material Type** : 15% Fiberglass, 85% Non-Fibrous Material			No	NAD
Comments:				
15A	240802044.52.C	240802044.52		
Location : Equipment Storage Roof South **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Cellulose, 40% Non-Fibrous Material			No	NAD
Comments:				
15B	240802044.53.A	240802044.53		
Location : Equipment Storage Roof Center **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black, Brown **Asbestos Type** : **NONE** **Other Material Type** : 15% Fiberglass, 85% Non-Fibrous Material			No	NAD
Comments:				

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Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
15B	240802044.53.B	240802044.53		
Location : Equipment Storage Roof Center **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Cellulose, 40% Non-Fibrous Material			No	NAD
Comments:				
15C	240802044.54.A	240802044.54		
Location : Equipment Storage Roof North **Analyst Description / Color** : Roof Tar, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
15C	240802044.54.B	240802044.54		
Location : Equipment Storage Roof North **Analyst Description / Color** : Roofing, Fibrous, Granular, Homogeneous, Black, Brown **Asbestos Type** : **NONE** **Other Material Type** : 15% Fiberglass, 85% Non-Fibrous Material			No	NAD
Comments:				
15C	240802044.54.C	240802044.54		
Location : Equipment Storage Roof North **Analyst Description / Color** : Roof Felt, Fibrous, Homogeneous, Black **Asbestos Type** : **NONE** **Other Material Type** : 60% Cellulose, 40% Non-Fibrous Material			No	NAD
Comments:				
16A	240802044.55.A	240802044.55		
Location : Elevated Roof Perimeter East **Analyst Description / Color** : Seam Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
16B	240802044.56.A	240802044.56		
Location : Elevated Roof Perimeter Center **Analyst Description / Color** : Seam Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				
16C	240802044.57.A	240802044.57		
Location : Elevated Roof Perimeter West **Analyst Description / Color** : Seam Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				
17A	240802044.58.A	240802044.58		
Location : Roof at South Exhaust **Analyst Description / Color** : Penetration Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				
17B	240802044.59.A	240802044.59		
Location : Roof at Center Exhaust **Analyst Description / Color** : Penetration Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				
17C	240802044.60.A	240802044.60		
Location : Roof at East Exhaust **Analyst Description / Color** : Penetration Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **NONE** **Other Material Type** : 3% Cellulose, 97% Non-Fibrous Material			No	NAD
Comments:				

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
18A	240802044.61.A	240802044.61		
Location : At Pool Edge South **Analyst Description / Color** : Concrete, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
18B	240802044.62.A	240802044.62		
Location : At Pool Edge West **Analyst Description / Color** : Concrete, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
18C	240802044.63.A	240802044.63		
Location : At Pool Edge North **Analyst Description / Color** : Concrete, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19A	240802044.64.A	240802044.64		
Location : Pool Interior Wall East **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19B	240802044.65.A	240802044.65		
Location : Pool Interior Wall North **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
19C	240802044.66.A	240802044.66		
Location : Pool Interior Wall NE **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19D	240802044.67.A	240802044.67		
Location : Pool Interior Wall NW **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19E	240802044.68.A	240802044.68		
Location : Pool Interior Wall West **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19F	240802044.69.A	240802044.69		
Location : Pool Interior Wall SW **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
19G	240802044.70.A	240802044.70		
Location : Pool Interior Wall South **Analyst Description / Color** : Plaster, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
20A	240802044.71.A	240802044.71		
Location : Main Lobby Center **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
20A	240802044.71.B	240802044.71		
Location : Main Lobby Center **Analyst Description / Color** : Mastic w/ Adhesive, Non-Homogeneous, Tarry, Tacky, Black, Yellow **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				
20B	240802044.72.A	240802044.72		
Location : Main Lobby Center **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
20B	240802044.72.B	240802044.72		
Location : Main Lobby Center **Analyst Description / Color** : Mastic w/ Adhesive, Non-Homogeneous, Tarry, Tacky, Black, Yellow **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				
20C	240802044.73.A	240802044.73		
Location : Main Lobby Center **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
20C	240802044.73.B	240802044.73		
Location : Main Lobby Center **Analyst Description / Color** : Mastic w/ Adhesive, Non-Homogeneous, Tarry, Tacky, Black, Yellow **Asbestos Type** : **Chrysotile** **Other Material Type** : 98% Non-Fibrous Material			Yes	2% Chrysotile
Comments:				
21A	240802044.74.A	240802044.74		
Location : Main Lobby South **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Blue **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
21A	240802044.74.B	240802044.74		
Location : Main Lobby South **Analyst Description / Color** : Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **Chrysotile** **Other Material Type** : 97% Non-Fibrous Material			Yes	3% Chrysotile
Comments:				
21B	240802044.75.A	240802044.75		
Location : Main Lobby Center **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Blue **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
21B	240802044.75.B	240802044.75		
Location : Main Lobby Center **Analyst Description / Color** : Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **Chrysotile** **Other Material Type** : 97% Non-Fibrous Material			Yes	3% Chrysotile
Comments:				

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PLM Bulk Asbestos Report

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Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
21C	240802044.76.A	240802044.76		
Location : Main Lobby North **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Blue **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
21C	240802044.76.B	240802044.76		
Location : Main Lobby North **Analyst Description / Color** : Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **Chrysotile** **Other Material Type** : 97% Non-Fibrous Material			Yes	3% Chrysotile
Comments:				
21D	240802044.77.A	240802044.77		
Location : Main Hallway North **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Blue **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
21D	240802044.77.B	240802044.77		
Location : Main Hallway North **Analyst Description / Color** : Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **Chrysotile** **Other Material Type** : 97% Non-Fibrous Material			Yes	3% Chrysotile
Comments:				
21E	240802044.78.A	240802044.78		
Location : Main Hallway South **Analyst Description / Color** : Vinyl Floor Tile, Firm, Homogeneous, Blue **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
21E	240802044.78.B	240802044.78		
Location : Main Hallway South **Analyst Description / Color** : Mastic, Homogeneous, Tarry, Black **Asbestos Type** : **Chrysotile** **Other Material Type** : 97% Non-Fibrous Material			Yes	3% Chrysotile
Comments:				
22A	240802044.79.A	240802044.79		
Location : Ext Pool Area at Ceramic Images South **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
22B	240802044.80.A	240802044.80		
Location : Ext Pool Area at Ceramic Images West **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
22C	240802044.81.A	240802044.81		
Location : Ext Pool Area at Ceramic Images North **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
23A	240802044.82.A	240802044.82		
Location : Ext South **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
23B	240802044.83.A	240802044.83		
Location : Ext West **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
23C	240802044.84.A	240802044.84		
Location : Ext North **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
23D	240802044.85.A	240802044.85		
Location : Pool Pump Room Exterior East **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
23E	240802044.86.A	240802044.86		
Location : Pool Pump Room Exterior West **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
23F	240802044.87.A	240802044.87		
Location : Pool Area West Planters North **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
23G	240802044.88.A	240802044.88		
Location : Pool Area West Planters South **Analyst Description / Color** : Brick, Granular, Homogeneous, Red **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
24A	240802044.89.A	240802044.89		
Location : Ext East **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
24B	240802044.90.A	240802044.90		
Location : Ext West **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
24C	240802044.91.A	240802044.91		
Location : Ext North **Analyst Description / Color** : Grout, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
25A	240802044.92.A	240802044.92		
Location : Pool Interior Floor at White Ceramic Tile Designs **Analyst Description / Color** : Grout, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 2% Fiberglass, 98% Non-Fibrous Material			No	NAD
Comments:				

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Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
25B	240802044.93.A	240802044.93		
Location : Pool Interior Floor at White Ceramic Tile Designs **Analyst Description / Color** : Grout, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 2% Fiberglass, 98% Non-Fibrous Material			No	NAD
Comments:				
25C	240802044.94.A	240802044.94		
Location : Pool Interior Floor at White Ceramic Tile Designs **Analyst Description / Color** : Grout, Granular, Homogeneous, White **Asbestos Type** : **NONE** **Other Material Type** : 2% Fiberglass, 98% Non-Fibrous Material			No	NAD
Comments:				
26A	240802044.95.A	240802044.95		
Location : Maintenance Room North West Wall **Analyst Description / Color** : Plaster w/ Skim Coat, Granular, Non-Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
26B	240802044.96.A	240802044.96		
Location : Maintenance Room North East Wall **Analyst Description / Color** : Plaster w/ Skim Coat, Granular, Non-Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
26C	240802044.97.A	240802044.97		
Location : Maintenance Room North **Analyst Description / Color** : Plaster w/ Skim Coat, Granular, Non-Homogeneous, Gray, White **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

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Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
27A	240802044.98.A	240802044.98		
Location : Ext North **Analyst Description / Color** : Stucco-Skim Coat, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
27A	240802044.98.B	240802044.98		
Location : Ext North **Analyst Description / Color** : Stucco-Base Coat, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
27B	240802044.99.A	240802044.99		
Location : Ext NE **Analyst Description / Color** : Stucco, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
27C	240802044.100.A	240802044.100		
Location : Ext Pool Area NW **Analyst Description / Color** : Stucco-Skim Coat, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
27C	240802044.100.B	240802044.100		
Location : Ext Pool Area NW **Analyst Description / Color** : Stucco-Base Coat, Granular, Homogeneous, Gray **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				

Ecologics Laboratories
2487 E. Orangethorpe Ave.
Fullerton, CA 92831
(714) 632-8118
www.ecologicslab.com

PLM Bulk Asbestos Report

Client: Omega Environmental Services, Inc.
Address: 4578 Campus Drive, Newport Beach, CA 92660
Project #: 2024-5452COSA
Project Name: Santa Ana Community Pool
Project Location: 2102 Flower St.

LAB Job #: 240802044
# of Samples: 103
Collected By: Zack R. William H.
Date Received: 08/02/2024
Date Analyzed: 08/06/2024

Client ID	Layer #	Lab ID	Asbestos (Y or N)	% Asbestos / Type
27D	240802044.101.A	240802044.101		
Location : Ext West Center **Analyst Description / Color** : Stucco, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
27E	240802044.102.A	240802044.102		
Location : Ext South **Analyst Description / Color** : Stucco, Granular, Homogeneous, Brown **Asbestos Type** : **NONE** **Other Material Type** : 100% Non-Fibrous Material			No	NAD
Comments:				
28A	240802044.103.A	240802044.103		
Location : South Roof Stack **Analyst Description / Color** : Transite Pipe, Granular, Homogeneous, Gray **Asbestos Type** : **Chrysotile, Crocidolite** **Other Material Type** : 85% Non-Fibrous Material			Yes	12% Chrysotile 3% Crocidolite
Comments:				

Chris Becerra – Analyst

Paola Ducoing – Approved by

NAD = no asbestos detected; NA = not analyzed, PS = positive stop; Reporting Limits: CVES = 1%, 400 PT CT = 0.25%, 1,000 PT CT = 0.1%. The analyses of the samples in this report were performed and analyzed in accordance with the procedures outlined in EPA 600/R-93/116 (Method for Determination of Asbestos in Building Materials); EPA 600/M4-82-020 (Interim Method for the Determination of Asbestos in Bulk Insulation Samples) and US Federal Register 40 CFR Appendix E to Subpart E of Part 763 (Interim Method of the Determination of Asbestos in Bulk Insulation Samples). Samples were analyzed using Calibrated Visual Estimate (CVES), therefore results may not be reliable for samples with low concentration levels or other Non-Friable Organically Bound (NOB) materials. The limit of detection for this analytical method is less than one percent (<1%) and total sample constituents may total greater than 100% due to trace amounts. These results lie within the statistical limits of variability calculated with standard reference materials routinely analyzed in the laboratory. In multi-layer samples, unless otherwise specified, the asbestos concentration is reported for the layer where asbestos is found. This report only relates to the samples that were submitted and Ecologics Lab and its personnel assumes no responsibility and/or are not liable for any misinformation provided by the client such as "sample location" or "sample type." This report may contain specific data not covered by NVLAP and is identified if footnotes are present. This report was issued by Ecologics Lab which is accredited by NVLAP (Lab Code 600190-0) and may not be reproduced except in full, without written approval of this laboratory. This report may not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. NVLAP Lab Code: 600190-0

240802044

ACM Bulk Sample Data Sheet

Omega Environmental Services, Inc.
4570 Campus Drive, Suite 30
Newport Beach, California 92660
Phone: (949) 252-2145, Fax: (949) 252-2148
Email: labreports@omegaenv.com or steve@omegaenv.com

Job ID:240802044
Omega Environmental Services, Inc.

OMEGA ENVIRONMENTAL

Analysis type: X PLM ___TEM

Project Number: 2024-5452COSA	Sample Date: 8/2/24
Project Name: Santa Ana Community Pool	TAT: _ Rush (3hr) _ Rush (6hr) X Rush (24hr) _ Two Day (48hr) _ Std. (3-5 day)
Project Address: 2102 Flower St.	Sampler/s Name/s: Zach R. William H.

HM# 1	Material Description: **Yellow Carpet Mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity: 800 SF**
1A	North Learning Center South	
1B	" " Center	
1C	South Office Center	

HM# 2	Material Description: **Black Basecove w/ Yellow Mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity: 100 SF**
2A	North Learning Center East Wall	
2B	South Office West Wall	
2C	Center Hallway East Wall	

HM# 3	Material Description: **White Basecove w/ Yellow Mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity: 50 SF**
3A	Main Lobby North Wall	
3B	Center Hallway West Wall	
3C	Center Hallway East Wall	

HM# 4	Material Description: **Black Hockey-puck Ceiling Tile Mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity: 100 SF**
4A	East Wall Top Side At Graphic	
4B	Main Hallway East	
4C	Main Hallway West (Found Under All Ceiling Tiles)	

HM# 5	Material Description: **Drywall w/ Joint Compound**	
Sample ID	**Sample Location & Material Location**	**Quantity: 4,500 SF**
5A	North Learning Center West Wall	
5B	South Office East Wall	
5C	Center Hallway South Wall	
5D	Main Lobby West Wall	

Relinquished By: Tony Hoang **Signature:** T Hoang **# of Samples** 100 **Date/Time:** 08/02/24 3:12PM
Received By: Emily Galindo **Signature:** [illegible] **# of Samples** ___ **Date/Time:** 8/2/24 3:16 PM

5E	Main Lobby Wall Next To Vending Machine

Job ID:240802044
Omega Environmental Services, Inc.

HM# 6	Material Description: 12"x12" White Pin-Hole Ceiling Tile	
Sample ID	Sample Location & Material Location	Quantity: 500 SF
6A	Hallway Towards Pool Entrance East	
6B	". " Center	
6B	". " West	

HM# 7	Material Description: 12"x12" White Ceiling Tile Fissured Texture	
Sample ID	Sample Location & Material Location	Quantity: 300 SF
7A	Main Lobby East	
7B	Main Lobby Center	
7C	Main Lobby West	

HM# 8	Material Description: Concrete Pad For Building	
Sample ID	Sample Location & Material Location	Quantity: 2,000 SF
8A	Pool Deck Outer Area West Center	
8B	Pool Deck Area NW	
8C	". " North	

HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
8D	". " NE	
8E	". " East	

HM# 9	Material Description: Asphalt Black	
Sample ID	Sample Location & Material Location	Quantity: 7,000 SF
9A	Ext. South	
9B	Ext. SW	
9C	Ext. West	
9D	Ext. NW	
9E	Ext. North	
9F	Ext. NE	
9G	Ext. East	

HM# 10	Material Description: Gray Hockey-Puck Mastic

Relinquished By: Tony Hoang Signature: _____ # of Samples 10 Date/Time: 08/02/24 3:12 PM
Received By: Emily Galindo Signature: _____ # of Samples ___ Date/Time: 8/2/24 3:16 PM

240802044

Sample ID	Sample Location & Material Location	Quantity: 75 SF
10A	Main Lobby Horizontal Ceiling East	
10B	" " Center	
10C	" " West	

Job ID:240802044
Omega Environmental Services, Inc.

HM# 11	Material Description: 12"x12" Ceiling Tile Pin-Hole Double Layered	
Sample ID	Sample Location & Material Location	Quantity: 300 SF
11A	Main Lobby Vertical Ceiling At Graphic South	
11B	" " Center	
11C	" " North	

HM# 12	Material Description: Gray Rubberized Mastic	
Sample ID	Sample Location & Material Location	Quantity: 50 SF
12A	Seams Where Rolled Roofing Meets Stucco, Center Elevated Roof Center	
12B	" " East	
12C	" " West	

HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:

HM# 1	Material Description: Roof Core	
Sample ID	Sample Location & Material Location	Quantity: 6,000 SF
14A	Roof SE	
14B	Roof South Center	
14C	Roof Center	
14D	Roof North Center	
14E	Elevated Roof South	
14F	Elevated Roof Center	
14G	Elevated Roof North	

HM# 15	Material Description: Roof Felt	
Sample ID	Sample Location & Material Location	Quantity: 200 SF
15A	Equipment Storage Roof South	
15B	" " Center	
15C	" " North	

HM# 16	Material Description: Black Roof Seam Mastic On Flashing	
Sample ID	Sample Location & Material Location	Quantity: 50 SF

Relinquished By: Tony Hoang Signature: Tony Hoang # of Samples 109 Date/Time: 08/02/24 3:12PM
Received By: Emily Galindo Signature: Emily # of Samples ___ Date/Time: 8/2/24 3:16pm

Job ID:240802044
Omega Environmental Services, Inc.

16A	Elevated Roof Perimeter East
16B	". " Center
16C	". " West

HM# 17	Material Description: **Black Penetration Mastic**	
Sample ID	**Sample Location & Material Location**	**Quantity: 25 SF**
17A	Roof At South Exhaust	
17B	Roof At Center Exhaust	
17C	Roof At East Exhaust	

HM# 18	Material Description: **Concrete Slab At Pool Edges**	
Sample ID	**Sample Location & Material Location**	**Quantity: 950 SF**
18A	At Pool Edge South	
18B	" " West	
18C	". " North	

HM# 19	Material Description: **White Pool Plaster Wall**	
Sample ID	**Sample Location & Material Location**	**Quantity: 5000 SF**
19A	Pool Interior Wall " East	
19B	". " North	
19C	". " NE	
19D	". "NW	
19E	" " West	
19F	". " SW	
19G	". " South	

Relinquished By: Tony Hoang **Signature:** Tony Hoang **# of Samples** 108 **Date/Time:** 08/02/24 3:12PM
Received By: Emily Galindo **Signature:** Emily **# of Samples** ___ **Date/Time:** 8/2/24 3:16PM

240802044

HM# 20	Material Description: 12"x12" VFT Gray w/ Black & Yellow Mastic	
Sample ID	Sample Location & Material Location	Quantity: 10SF
20A	Main Lobby Center	
20B	". "	
20C	". "	

Job ID:240802044
Omega Environmental Services, Inc.

HM# 21	Material Description: 12"x12" VFT Blue w/ Black & Yellow Mastic	
Sample ID	Sample Location & Material Location	Quantity: 2000 SF
21A	Main Lobby South	
21B	Main Lobby Center	
21C	Main lobby North	

HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
21D	Main Hallway North	
21E	Main Hallway South	

HM# 22	Material Description: Cermic Tile Grout	
Sample ID	Sample Location & Material Location	Quantity: 20 SF
22A	Ext. Pool Area At Ceramic Images South	
22B	". " West	
22C	". " North	

HM# 23	Material Description: Red Brick	
Sample ID	Sample Location & Material Location	Quantity: 8,000 SF
23A	Ext. South	
23B	Ext. West	
23C	Ext. North	
23D	Pool Pump Room Exterior East	
23E	" " West	
23F	Pool Area West Planters North	
23G	" " South	

Relinquished By: Tony Hoang Signature: Tony Hoang # of Samples 102 Date/Time: 08/02/24 3:12PM
Received By: Emily Galindo Signature: Emily # of Samples ___ Date/Time: 8/2/24 3:16 PM

240802044

HM# 24	Material Description: Brick Grout	
Sample ID	Sample Location & Material Location	Quantity: 500 Sf
24A	Ext. East	
24B	Ext. West	
24C	Ext. North	

Job ID:240802044
Omega Environmental Services, Inc.

HM# 25	Material Description: 4"x4" White Cermic Tile Grout	
Sample ID	Sample Location & Material Location	Quantity: 25F
25A	Pool Interior Floor At White Cermic Tile Designs	
25B	" "	
25C	" "	

HM# 26	Material Description: Gray Plaster	
Sample ID	Sample Location & Material Location	Quantity: 250 SF
26A	Maintenance Room North West Wall	
26B	" " East Wall	
26C	" "	

HM# 27	Material Description: Multi-color Stucco/ Skim-coat	
Sample ID	Sample Location & Material Location	Quantity: 4,000 SF
27A	Ext. North	
27B	Ext. NE	
27C	Ext. Pool Area NW	

HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
27D	Ext. West Center	
27E	Ext. South	

HM# 28	Material Description: 6" Transite Pipe	
Sample ID	Sample Location & Material Location	Quantity: 35 SF
28A	South Roof Stack	

HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:

Relinquished By: Tony Hoang Signature: T Hoang # of Samples 108 Date/Time: 08/02/24 3:12PM
Received By: Emily Gallardo Signature: Emily # of Samples ___ Date/Time: 8/2/24 3:16 PM

Appendix 2

XRF Field Logs and Calibration Report

XRF Field logs

Job #	2024-5452COSA
Site Address	2102 Flower St.
Date	8/2/24
Instrument ID / Criteria	24918

Shot ID	Area/Room ID (Room Equivalent)	Side N/S/E/W	Component	Substrate	Color	Condition I/F/P	Est. Qty. No/LF/SF	Read mg/CM²
1	Roof	E	Stack cap	Metal	Silver	I		.12
2								.01
3								.01
4	Roof	N	Exhaust Stack	Metal	Silver			.23
5								.45
6								.33
7	Roof	East	Exhaust Lid Screw	metal	Silver		5 SF	5.00
8								5.00
9								5.00
10	Roof	Center	Roof Sashing	Wood	Blue		50 SF	2.33
11								3.15
12								4.03
13	Pool Area	S	Wall	Stucco	White			.02
14								.00
15								.00
16	Pool Area	S	Wall	Stucco	Blue			.01
17								.03
18								.02

Notes/Comments:

12”x12” White/Brown wall tiles found in both men’s and women’s pool area restrooms

XRF Field logs

Job #	2024-5452COSA
Site Address	2102 Flower St.
Date	8/2/24
Instrument ID / Criteria	24918

Shot ID	Area/Room ID (Room Equivalent)	Side N/S/E/W	Component	Substrate	Color	Condition I/F/P	Est. Qty. No/LF/SF	Read mg/CM²
19	Pool Maint. Room	E	Exhaust Vent	Metal	White/Gray	I		.23
20								.10
21								.12
22	Pool Edges	S	Tile 6”x6”	Porcelain	Light Blue			.15
23		E						.02
24		W						.00
25	Pool	S	Tile 1”x1”	Porcelain	White			.04
26		E						.22
27		W						.16
28	Pool	S	Tile 6”x6”	Porcelain	Black			.23
29		E						.23
30		W						.14
31	Pool	S	Tile 6”x6”	Porcelain	Dark Blue			.10
32		E						.43
33		W						.34
34	Pool Edges	N	Tile 6”x6”	Porcelain	White			.11
35		E						.14
36		W						.20

Notes/Comments:

12”x12” White/Brown wall tiles found in both men’s and women’s pool area restrooms

XRF Field logs

Job #	2024-5452COSA
Site Address	2102 Flower St.
Date	8/2/24
Instrument ID / Criteria	24918

Shot ID	Area/Room ID (Room Equivalent)	Side N/S/E/W	Component	Substrate	Color	Condition I/F/P	Est. Qty. No/LF/SF	Read mg/CM²
37	Community Bldg.	N	Door Frame	Metal	Brown	I		.10
38			Door					.12
39			Door Jamb					.10
40	Women's Restroom Hall	E	Gate	Metal	Blue			.32
41								.48
42								.36
43	Pool Area Women's Restroom Hall	E	Wall	Drywall	White			.01
44								.13
45								
46	Pool Area Women's Restroom Hall	E	Wall	Brick	White			.04
47								.35
48								.24
49	Pool Area Women's Restroom	W	Wall Tile 12"x12"	Porcelain	Brown		50 SF	5.00
50		E						4.98
51		E						4.33
52	Pool Area Women's Restroom	E	Wall Tile 12"x12"	Porcelain	White		200 SF	4.77

Notes/Comments:

12"x12" White/Brown wall tiles found in both men's and women's pool area restrooms

XRF Field logs

Job #	2024-5452COSA
Site Address	2102 Flower St.
Date	8/2/24
Instrument ID / Criteria	24918

53		E						4.83
54		E						4.98

Shot ID	Area/Room ID (Room Equivalent)	Side N/S/E/W	Component	Substrate	Color	Condition I/F/P	Est. Qty. No/LF/SF	Read mg/CM²
55	Pool Area Women's Restroom	Center	Floor Tile Multi-Colored Multi-Sized	Porcelain	Brown	I		.02
56								.03
57								.03
58	Pool Area Men's Restroom	W	Toilet Top	Porcelain	White			.29
59		W	Toilet Bowl					.23
60		W	Toilet Base					.22
61	Pool Area Men's Restroom	S	Sink Top	Porcelain	White			.04
62		S	Sink Bowl					.04
63		S	Sink Base					.01
64	Pool Area	S	Wall	Brick	Blue			.02
65								.00
66								.01
67	Pool Area	S	Wall "Mural"	Stucco	Mult-Color			.23
68								.22
69								.28

Notes/Comments:

12"x12" White/Brown wall tiles found in both men's and women's pool area restrooms

XRF Field logs

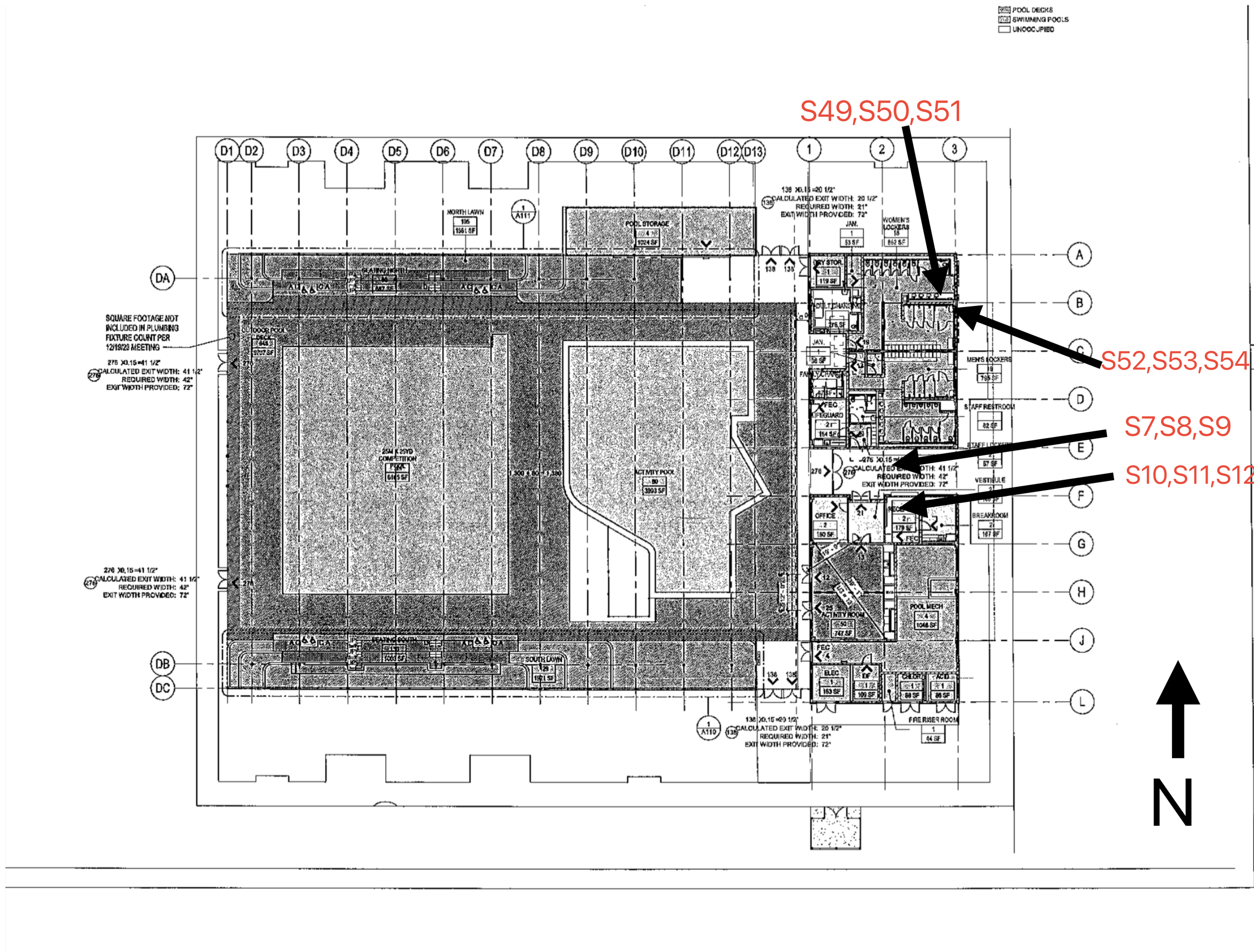
Job #	2024-5452COSA
Site Address	2102 Flower St.
Date	8/2/24
Instrument ID / Criteria	24918

70	Pool Area Storage Room	S	Pipe	Metal	Blue			.05
71								.06
72								.12

Shot ID	Area/Room ID (Room Equivalent)	Side N/S/E/W	Component	Substrate	Color	Condition I/F/P	Est. Qty. No/LF/SF	Read mg/CM²
73	Community Bldg.	N	Door Jamb	Wood	Green	I		.04
74			Door Frame					.32
75			Door Face					.23
76	Community Bldg.	W	Wall	Drywall	Yellow			.12
77								.14
78								.14
79	Community Bldg.	E	Wall	Drywall	Blue			.33
80								.23
81								.54
82								
83								
84								
85								
86								

Notes/Comments:

12”x12” White/Brown wall tiles found in both men’s and women’s pool area restrooms


S49,S50,S51
S52,S53,S54
S7,S8,S9
S10,S11,S12
N
POOL DECKS
SWIMMING POOLS
UNOCCUPIED
EGRESS LEGEN
SQUARE FOOTAGE NOT INCLUDED IN PLUMBING FIXTURE COUNT PER 12/19/23 MEETING
276 X0.15=41 1/2"
CALCULATED EXIT WIDTH: 41 1/2"
REQUIRED WIDTH: 42"
EXIT WIDTH PROVIDED: 72"
138 X0.15=20 1/2"
CALCULATED EXIT WIDTH: 20 1/2"
REQUIRED WIDTH: 21"
EXIT WIDTH PROVIDED: 72"
NORTH LAWN
SEATING NORTH
SEATING SOUTH
SOUTH LAWN
OUTDOOR POOL DECK
25M X 25YD COMPETITION POOL
ACTIVITY POOL
POOL STORAGE
WOMEN'S LOCKERS
MEN'S LOCKERS
STAFF RESTROOM
STAFF LOCKER
VESTIBULE
OFFICE
BREAKROOM
ACTIVITY ROOM
POOL MECH
FAMILY CHANGE
ADULT CHANGE
DRY STOR.
JAN.
ELEC
IDF
FIRE RISER ROOM
LIFEGUARD
FEC
Name
AREA NAME (SEE EG
OCCUPANT LOAD
AREA (SF)
EXIT #
EXIT NUMBER (OPTIO
EXIT CAPACITY
ACTUAL NUMBER OF
DOOR WIDTH (CLEARANCE WHEN
STAIRWAY WIDTH
COMPANION SEAT
SEMI-AMBULATORY S
DESIGNATED AISLE S
EGRESS PATH
PATH OF TRAVEL DIS
PANIC HARDWARE

Lead Based Paint Photo Log
2102 S. Flower street
Santa Ana, California 92703

Silver paint

Blue paint

Lead Based Paint Photo Log
2102 S. Flower street
Santa Ana, California 92703

Brown and white tiles throughout
restrooms

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC

11397 Slater Ave.
Fountain Valley, CA 92708
Toll-free: 888-620-7463

Pine Environmental Services, Inc.

Instrument ID 24918
Description Innov-X Delta Series XRF
Calibrated 8/1/2024 12:33:41PM

Manufacturer Innov-X/Olympus Systems
Model Number DC-2000
Serial Number/ Lot Number 560920
Location California
Department

State Certified
Status Pass
Temp °C 23
Humidity % 45

Calibration Specifications

Group # 1
Group Name Function Test
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Juan Marquez

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

Appendix 3

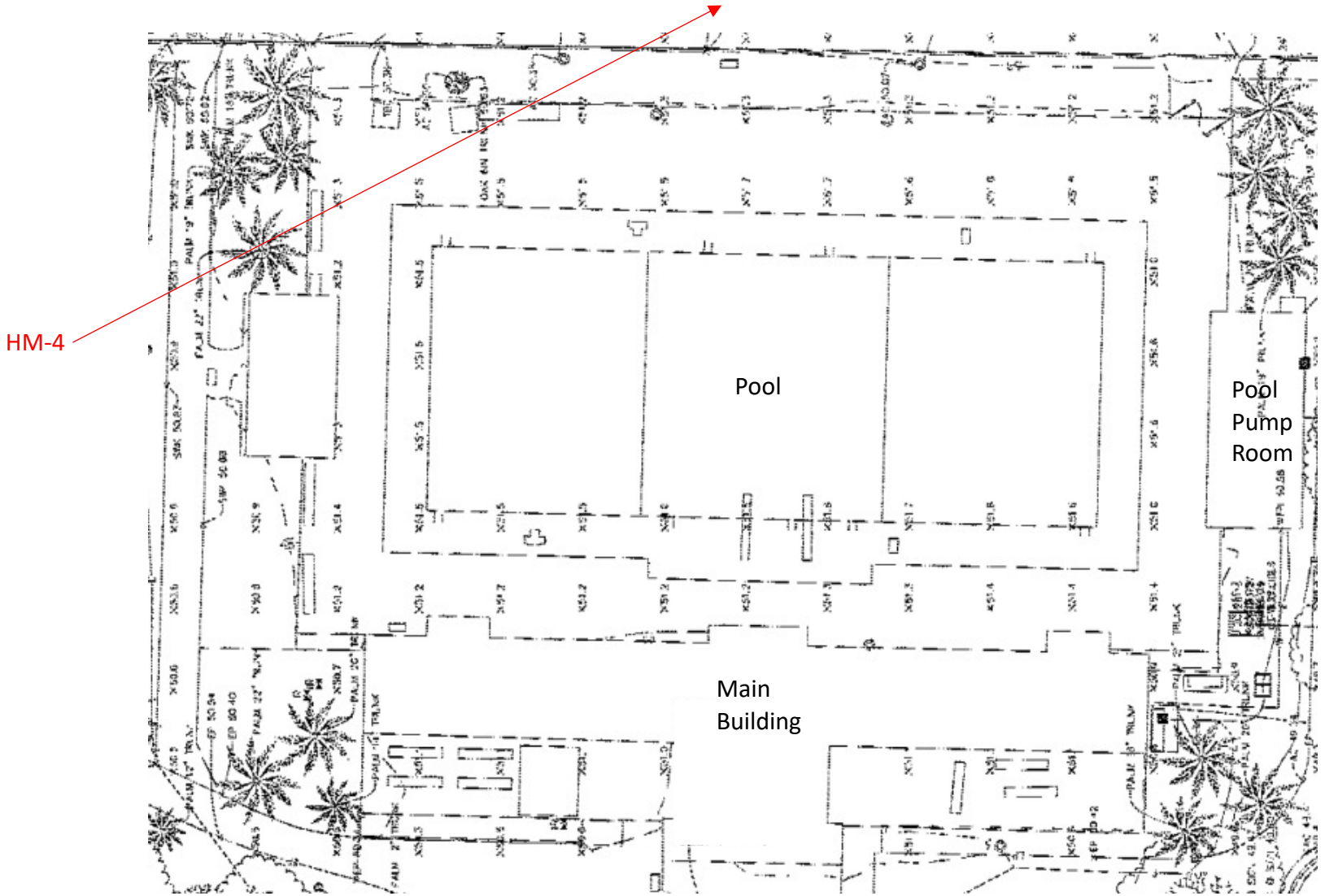
PCBs Laboratory Analytical Results, and Chain of Custody

PCB Bulk Sample Analytical Results
2102 S. Flower Street
Santa Ana, California 92703
Sampling Date: August 2, 2024
Omega Project Number: 2024-5452COSA

Field I.D.	Material Description	General Sample Location	Result mg/kg Aroclor-1254
HM-1	Gray expansion joint compound	Exterior pool outer ridge	ND
HM-2	Black penetration mastic	Roof	ND
HM-3	Black roofing materials	Roof	1.2
HM-4	Black asphalt	Exterior east side	ND

Method: 8082 – Polychlorinated Biphenyls (PCBs) by Gas Chromatography
mg/kg = milligrams per kilograms
ND = None Detected

PCB Sample Locations: Exterior



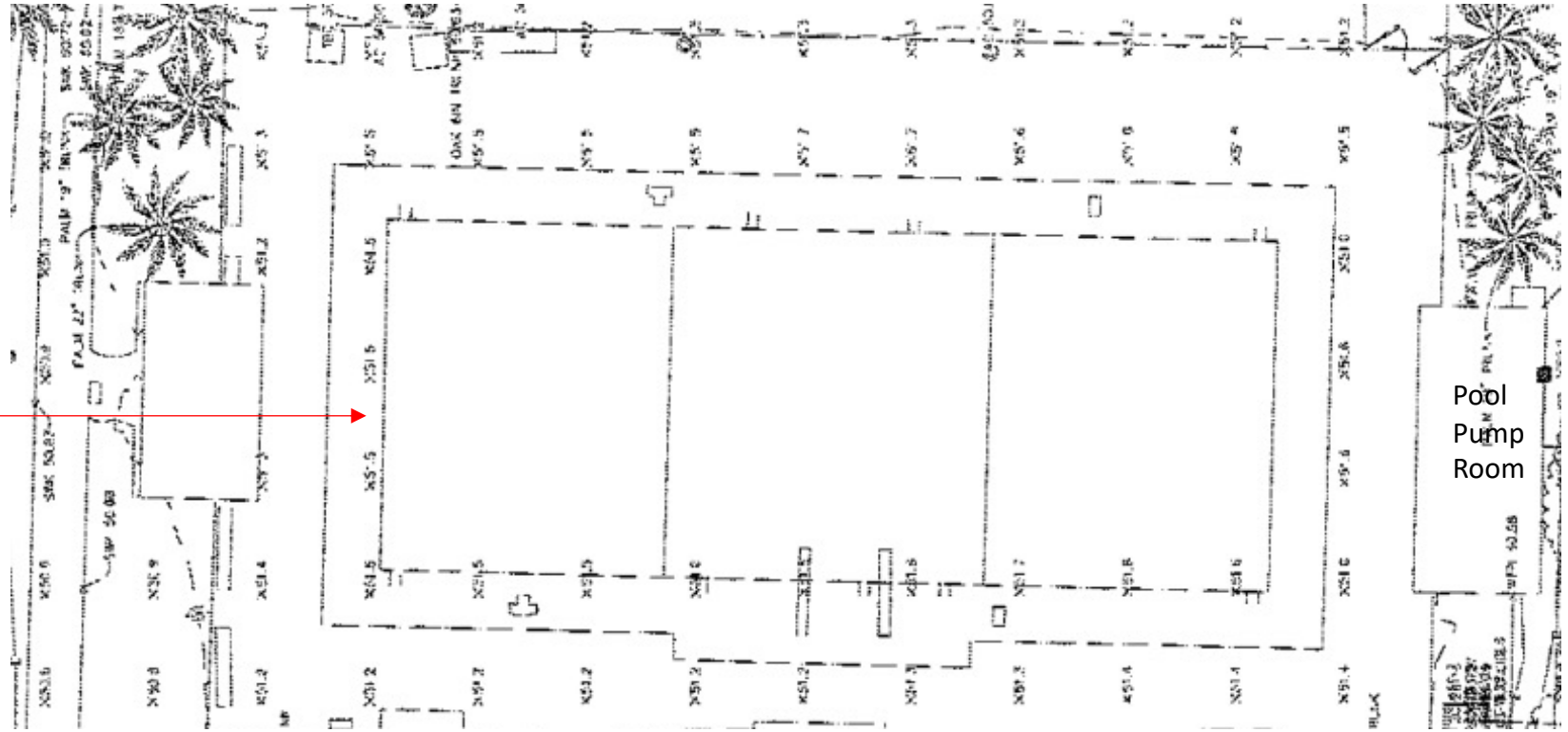
Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Pool



Omega Environmental Services

Project # 2024-5452COSA

2102 S Flower St., Santa Ana, CA

N

Roof

EMSL Analytical, Inc.

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

August 08, 2024

Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 8/5/2024. The results are tabulated on the attached pages for the following client designated project:

2024-5452COSA - Santa Ana Public Pool

The reference number for these samples is EMSL Order #: AC25575 . Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact the lab at 856-858-4800.

Owen McKenna Laboratory Manager or other approved signatory

Table of Contents

EMSL Analytical, Inc.

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Sample Condition on Receipt

Cooler ID: Default Cooler **Temperature: 21.4 °C**

Custody Seals	Y
Containers Intact	Y
COC/Labels Agree	Y
Preservation Confirmed	Y

EMSL Analytical, Inc.

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
AC25575-01	HM-1	Solid	8/2/24 12:00 am	08/05/2024
AC25575-02	HM-2	Solid	8/2/24 12:00 am	08/05/2024
AC25575-03	HM-3	Solid	8/2/24 12:00 am	08/05/2024
AC25575-04	HM-4	Solid	8/2/24 12:00 am	08/05/2024

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EMSL-CIN-01

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(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool
Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Positive Hits Summary

Lab ID	Client ID				Sampled
AC25575-03	HM-3				08/02/24 00:00
Method	Analyte	Result	Qualifier	Unit	Analyzed
SW846-8082A	**Aroclor-1254**	**1.2**		**mg/kg**	**08/07/2024 14:04**

EMSL Analytical, Inc.

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Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Sample Results

Sample: HM-1/Ext Pool Outer Ridge North
AC25575-01 (Solid)

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
GC-SVOA										
Aroclor-1016	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1221	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1232	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1242	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1248	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1254	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1260	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1262	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1268	ND		1	0.24	mg/kg	08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	SW846-8082A
Surrogate(s)	**Recovery**	**Q**		**Limits**						
Surrogate: Tetrachloro-m-xylene	*63%*			*10-112*		08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	*SW846-8082A*
Surrogate: Decachlorobiphenyl	*65%*			*10-123*		08/06/24 10:03	08/07/24 13:20	CWA/TL1	SW846 3546	*SW846-8082A*

EMSL Analytical, Inc.

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Sample Results
(Continued)

Sample: HM-2/Roof at North Exhaust
AC25575-02 (Solid)

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
GC-SVOA										
Aroclor-1016	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1221	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1232	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1242	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1248	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1254	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1260	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1262	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1268	ND		1	1.1	mg/kg	08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	SW846-8082A
Surrogate(s)	**Recovery**	**Q**		**Limits**						
Surrogate: Tetrachloro-m-xylene	*55%*			*10-112*		08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	*SW846-8082A*
Surrogate: Decachlorobiphenyl	*40%*			*10-123*		08/06/24 10:03	08/07/24 13:42	CWA/TL1	SW846 3546	*SW846-8082A*

EMSL Analytical, Inc.

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Sample Results
(Continued)

Sample: HM-3/Elevated Roof Center
AC25575-03 (Solid)

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
GC-SVOA										
Aroclor-1016	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1221	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1232	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1242	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1248	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1254	**1.2**		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1260	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1262	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1268	ND		1	1.0	mg/kg	08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	SW846-8082A
Surrogate(s)	**Recovery**	**Q**		**Limits**						
Surrogate: Tetrachloro-m-xylene	*59%*			*10-112*		08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	*SW846-8082A*
Surrogate: Decachlorobiphenyl	*46%*			*10-123*		08/06/24 10:03	08/07/24 14:04	CWA/TL1	SW846 3546	*SW846-8082A*

EMSL Analytical, Inc.

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Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
Omega Environmental Services, Inc. [OMEG34]
4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Sample Results
(Continued)

Sample: HM-4/Ext East
AC25575-04 (Solid)

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
GC-SVOA										
Aroclor-1016	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1221	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1232	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1242	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1248	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1254	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1260	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1262	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Aroclor-1268	ND		1	0.94	mg/kg	08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	SW846-8082A
Surrogate(s)	**Recovery**	**Q**		**Limits**						
Surrogate: Tetrachloro-m-xylene	*66%*			*10-112*		08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	*SW846-8082A*
Surrogate: Decachlorobiphenyl	*58%*			*10-123*		08/06/24 10:03	08/07/24 14:25	CWA/TL1	SW846 3546	*SW846-8082A*

EMSL Analytical, Inc.

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Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012425575
LIMS Reference ID: AC25575
EMSL Customer ID: OMEG34

Attention: Navid Salari
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4570 Campus Drive, Suite 30
Newport Beach, CA 92660
(949) 302-6826
navid@omegaenv.com

Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Quality Control

GC-SVOA

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BCH0566 - SW846 3546										
Blank (BCH0566-BLK1)					Prepared: 8/6/2024 Analyzed: 8/7/2024					
Aroclor-1016	ND		0.25	mg/kg						
Aroclor-1221	ND		0.25	mg/kg						
Aroclor-1232	ND		0.25	mg/kg						
Aroclor-1242	ND		0.25	mg/kg						
Aroclor-1248	ND		0.25	mg/kg						
Aroclor-1254	ND		0.25	mg/kg						
Aroclor-1260	ND		0.25	mg/kg						
Aroclor-1262	ND		0.25	mg/kg						
Aroclor-1268	ND		0.25	mg/kg						
Surrogate(s)										
Surrogate: Tetrachloro-m-xylene					*0.5000*		*56*	*10-112*		
Surrogate: Decachlorobiphenyl					*0.5000*		*60*	*10-123*		
LCS (BCH0566-BS1)					Prepared: 8/6/2024 Analyzed: 8/7/2024					
Aroclor-1016	3.04		0.25	mg/kg	5.000		61	23-111		
Aroclor-1260	2.90		0.25	mg/kg	5.000		58	29-119		
Surrogate(s)										
Surrogate: Tetrachloro-m-xylene					*0.5000*		*58*	*10-112*		
Surrogate: Decachlorobiphenyl					*0.5000*		*60*	*10-123*		

EMSL Analytical, Inc.

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Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Certified Analyses included in this Report

Analyte	CAS #	Certifications
SW846-8082A in Solid		
Aroclor-1016	12674-11-2	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1221	11104-28-2	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1232	11141-16-5	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1242	53469-21-9	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1248	12672-29-6	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1254	11097-69-1	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1254 [2C]	11097-69-1	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1260	11096-82-5	NJDEP,NYSDOH,PADEP,California ELAP
Aroclor-1262	37324-23-5	NJDEP,NYSDOH,PADEP
Aroclor-1268	11100-14-4	NJDEP,NYSDOH,PADEP

List of Certifications

Code	Description	Number	Expires
MADEP	Massachusetts Department of Environmental Protection	M-NJ337	06/30/2024
California ELAP	California Water Boards	1877	06/30/2024
A2LA	A2LA Environmental Certificate	2845.01	07/31/2024
AIHA LAP	EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-ELLAP Accredited	100194	01/01/2025
NJDEP	New Jersey Department of Environmental Protection	03036	06/30/2024
PADEP	Pennsylvania Department of Environmental Protection	68-00367	11/30/2024
NYSDOH	New York State Department of Health	10872	04/01/2025
CTDPH	Connecticut Department of Public Health	PH-0270	06/23/2024

Please see the specific Field of Testing (FOT) on www.emsl.com <http://www.emsl.com> for a complete listing of parameters for which EMSL is certified.

EMSL Analytical, Inc.

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EMSL-CIN-01

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Project Name: 2024-5452COSA - Santa Ana Public Pool

Customer PO:
EMSL Sales Rep: Callum McMillan
Received: 08/05/2024 09:00
Reported: 08/08/2024 14:00

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.
%REC	Percent Recovery
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

AC25575

PCB

Omega Environmental Services, Inc.

4570 Campus Drive, Suite 30

Newport Beach, California 92660

Phone: (949) 252-2145, Fax: (949) 252-2148

1311/7420/SM 3111B

Email: navid@omegaenv.com

Project Number: 2024-5452COSA	Sample Date: 8/2/24
Project Name: Santa Ana Public Pool	TAT: _Rush (3hr) _Rush (6hr) _Rush (24hr) _Two Day (48hr) ~~X~~Std. (3-5 day)
Project Address: 2102 Flower St.	Sampler/s Name/s: Zach R. Willy H.

Sample ID	Sample Description and Location	Quantity
HM-1	Color: Gray Substrate: Expansion Joint Composite Sample: Y / N Sample Location: Ext. Pool Outer Ridge North Condition/other notes:	100 SF
HM-2	Color: Black Substrate: Penetration Mastic Composite Sample: Y / N Sample Location: Roof At North Exhaust Condition/other notes:	50 SF
HM-3	Color: Black Substrate: Roof Core Composite Sample: Y / N Sample Location: Elevated Roof Center Condition/other notes:	6,000 SF
HM-4	Color: Black Substrate: Asphalt Composite Sample: Y / N Sample Location: Ext. East Condition/other notes:	6,000 SF
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	

Donnelly 8/05/24 9am

21.4°C Rec'd in plastic

Relinquished By: Tony Hoang **Signature:** Tony Hoang **Date/Time:** 08/02/24 2:17PM

Received By: Josh Colombini (WV) **Signature:** _____ **Date/Time:** 8.2.24 2:17pm

Relinquished: Josh Colombini (FX) 8.2.24 2:45pm

Page # __ of __

AC25575

PCB

Omega Environmental Services, Inc.

4570 Campus Drive, Suite 30

Newport Beach, California 92660

Phone: (949) 252-2145, Fax: (949) 252-2148

1311/7420/SM 3111B

Email: navid@omegaenv.com

Project Number: 2024-5452COSA	Sample Date: 8/2/24
Project Name: Santa Ana Public Pool	TAT: _Rush (3hr) _Rush (6hr) _Rush (24hr) _Two Day (48hr) ~~X~~Std. (3-5 day)
Project Address: 2102 Flower St.	Sampler/s Name/s: Zach R. Willy H.

Sample ID	Sample Description and Location	Quantity
HM-1	Color: Gray Substrate: Expansion Joint Composite Sample: Y / N Sample Location: Ext. Pool Outer Ridge North Condition/other notes:	100 SF
HM-2	Color: Black Substrate: Penetration Mastic Composite Sample: Y / N Sample Location: Roof At North Exhaust Condition/other notes:	50 SF
HM-3	Color: Black Substrate: Roof Core Composite Sample: Y / N Sample Location: Elevated Roof Center Condition/other notes:	6,000 SF
HM-4	Color: Black Substrate: Asphalt Composite Sample: Y / N Sample Location: Ext. East Condition/other notes:	6,000 SF
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	
	Color: _____ Substrate: _____ Composite Sample: Y / N Sample Location: Condition/other notes:	

LMonnelly 8/05/24 9am

21.4°C Rec'd in plastic

Relinquished By: Tony Hoang **Signature:** Tony Hoang **Date/Time:** 08/02/24 2:17PM

Received By: Josh Colombini (WV) **Signature:** _____ **Date/Time:** 8.2.24 2:17pm

Relinquished: Josh Colombini (Fx) 8.2.24 2:45pm

Page #__ of __

Appendix 4

Laboratory's Accreditation and Inspectors' Certifications

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 600190-0

Ecologics Laboratories

Fullerton, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2023-07-01 through 2024-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Laboratory ID: LAP-100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: January 01, 2025
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: January 01, 2025
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: January 01, 2025
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision20: 06/07/2022

Date Issued: 01/01/2023

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077

Laboratory ID: LAP-100194
Issue Date: 01/01/2023

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air and composited wipes analyses are not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

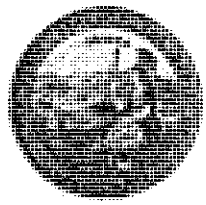
Initial Accreditation Date: 01/18/1995

Component, parameter or characteristic tested	Technology sub-type/Detector	Method	Method Description *(for internal methods only)*
Airborne Dust	AA	NIOSH 7082	N/A
Composited Wipes	AA	EPA SW-846 3050B	N/A
		EPA SW-846 7000B	N/A
Paint	AA	EPA SW-846 3050B	N/A
		EPA SW-846 7000B	N/A
Settled Dust by Wipe	AA	EPA SW-846 3050B	N/A
		EPA SW-846 7000B	N/A
Soil	AA	EPA SW-846 3050B	N/A
		EPA SW-846 7000B	N/A

A complete listing of currently accredited ELLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

STATE OF CALIFORNIA Gavin Newsom, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health-Asbestos Certification
1750 Howe Avenue, Suite 460
Sacramento, CA 95825
(916) 574-2993 Office http://www.dir.ca.gov/dosh/asbestos.html actu@dir.ca.gov



203147076T **466**

March 11, 2024

Zachary S. Rosas
22501 Chase Apt. 6107
Aliso Viajo CA 92656

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

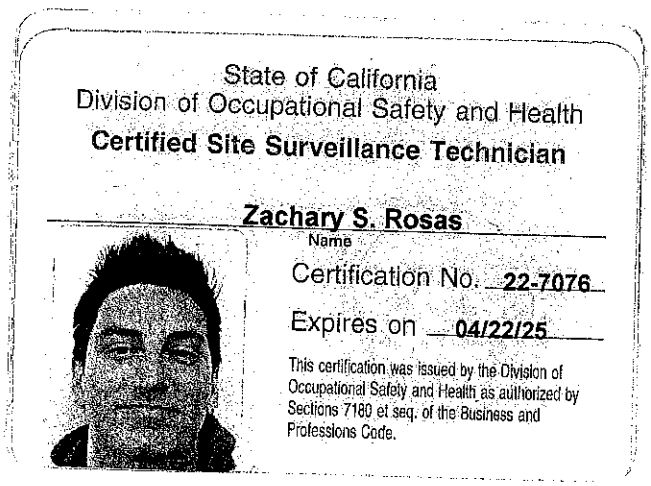
Please contact our office at the above address or email w any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Kevin Graulich
Principal Safety Engineer

Attachment: Certification Card

cc: File


State of California
Division of Occupational Safety and Health
Certified Site Surveillance Technician

Zachary S. Rosas
Name

Certification No. **22-7076**

Expires on **04/22/25**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

Renewal – Card Attached

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

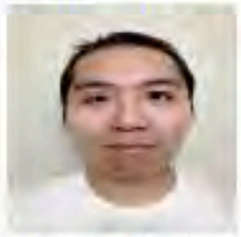
INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 Zachary Rosas	Lead Sampling Technician	LRC-00003328	11/1/2024

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clpph or calling (800) 597-LEAD

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 **Tony Hoang**	Lead Sampling Technician	LRC-00010622	1/4/2025

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

CERTIFICATE NUMBER

86141

Certificate of Attendance

This is to Certify that

TONY HOANG

Has Completed the Course of

AHERA ASBESTOS ABATEMENT CONTRACTOR/SUPERVISOR 8 HR. REFRESHER COURSE CA-014-04

UNDER TSCA 206, FOR PURPOSES OF COMPLIANCE WITH 29 CFR 1926.1101 AND TITLE 8 CCR 1529 AND TITLE 8 CCR 5208.

ARMANDO DUCOING
DIRECTOR

January 26, 2024	**E012624CSR 012624**	**January 26, 2025**
COMPLETION DATE	CLASS NUMBER / STARTING DATE	CERTIFICATE EXPIRES

Ecologics Training Institute

2487 E. Orangethorpe Ave. Fullerton, CA 92831 . Ph (714) 632-8100. Fax (714) 635 8111 . www.ecologicsonline.com

CERTIFICATE NUMBER

Certificate of Attendance

70798

This is to Certify that

TONY HOANG

Has Completed the Course of

AHERA ASBESTOS ABATEMENT BUILDING INSPECTOR 4 HR. REFRESHER COURSE CA-014-06

UNDER TSCA 206, FOR PURPOSES OF COMPLIANCE WITH 29 CFR 1926.1101 AND TITLE 8 CCR 1529 AND TITLE 8 CCR 5208.

ARMANDO DUCOING
DIRECTOR

January 12, 2024	**E011224BIR 011224**	**January 12, 2025**
COMPLETION DATE	CLASS NUMBER / STARTING DATE	CERTIFICATE EXPIRES

Ecologics Training Institute

2487 E. Orangethorpe Ave. Fullerton, CA 92831 . Ph (714) 632-8100. Fax (714) 635 8111 . www.ecologicsonline.com

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
	Lead Sampling Technician	LRC-00012413	2/22/2025

William Hawck

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

Certificate Of Completion

Asbestos Building Inspector Initial Course

DOSH #:CA-015-05

William Hawck

ABII0828230007N35198

Alan Dages
Principal Instructor

Michael W. Horner
Training Director

8/28/2023	8/30/2023	8/30/2023	8/30/2024
Course Start Date	Course End Date	Exam Date	Expiration Date

This course satisfies the education requirements for Asbestos accreditation under the Toxic Substances Control Act, Title II. This course has been approved by the Department of Industrial Relations, Division of Occupational Safety and Health of the State of California

NATEC INTERNATIONAL

NATEC International, Inc.
National Association of Training and Environmental Consulting
1100 Technology Circle, Suite A, Anaheim, CA 92805 • www.natecintl.com • 800-969-3228

Important Industry Contacts

CAL-OSHA: Ph# (916) 574-2993
(916) 483-0572 Fax Notification
Web: www.dir.ca.gov or calosha.com

CDPH/CLPPB: Ph# (510) 620-5600
Web: www.cdph.ca.gov/programs/CLPPB

SCAQMD: Ph# (909) 396-3739
Fax#(909) 396-3342

BAAQMD: Ph# (415) 749-4762

NATEC International, Inc.
National Association of Training and Environmental Consulting
Asbestos • Lead • Mold • HAZWOPER

PO Box 8657, Fountain Valley, CA 92728
(714) 678-2750, (800) 969-3228, Fax (714) 678-2757
www.natecintl.com

NATEC International, Inc.
National Association of Training and Environmental Consulting
*Note: Card is not suitable substitute for certificate and is not accepted by SCAQMD as proof of certification

This Card Acknowledges That
William Hawck

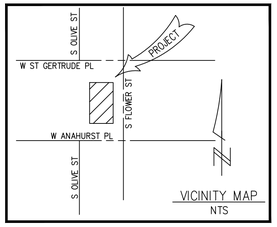
Holds Training Certification For
Asbestos Building Inspector Initial Course

Expiration: 8/30/2024

Training Date 8/28/2023
Certificate No. ABII0828230007N35198

Michael W. Horner
Training Director

ADDENDUM NO. 2
PROJECT NO. 22-1415



CREW NOTES

-REMOVE OLD XFMR, PRIMARY CABLE, SERVICE CABLE GOING TO TWO PANELS
-INSTALL NEW RUN OF PRIMARY TO PME-5 THEN FROM PME-5 TO XFMR
-SET PME-5 SML
-SET 1500KVA XFMR
-PULL 4 RUNS OF 700 TO NEW CUSTOMER PANEL

CUSTOMER NOTES

-INSTALL ALL NEW DUCTS & STRUCTURES
-SEE DECAL PAGE FOR GENERAL RULES & REQUIREMENTS

CONTACT INFO:

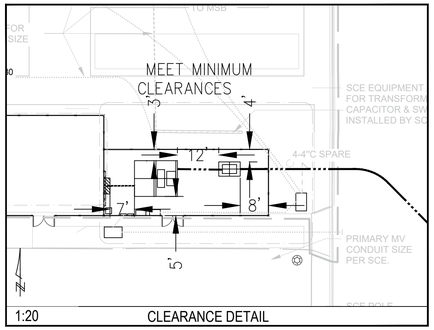
SCE PLANNER:
NAME: JACOBO DE LA O
PHONE: 626-201-0649

CUSTOMER:
NAME: VICTOR ROSALES
PHONE: 714-904-8950

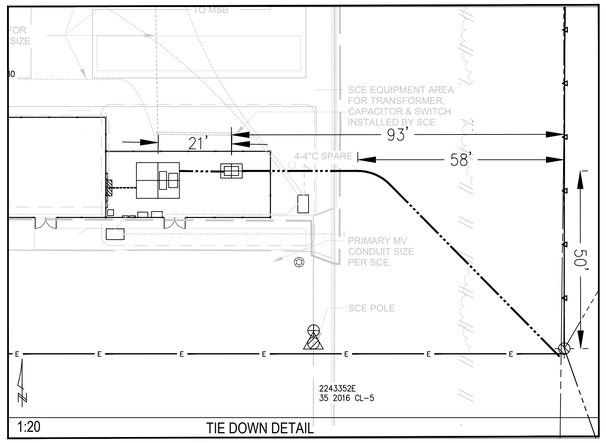
SCE Inspection

Contact SCE 48 Hours in advance for a Pre-Construction meeting and/or Inspection.

SCE INSPECTOR:
NAME: FREDDY MARTINEZ
PHONE: 714-285-4374



1:20 CLEARANCE DETAIL



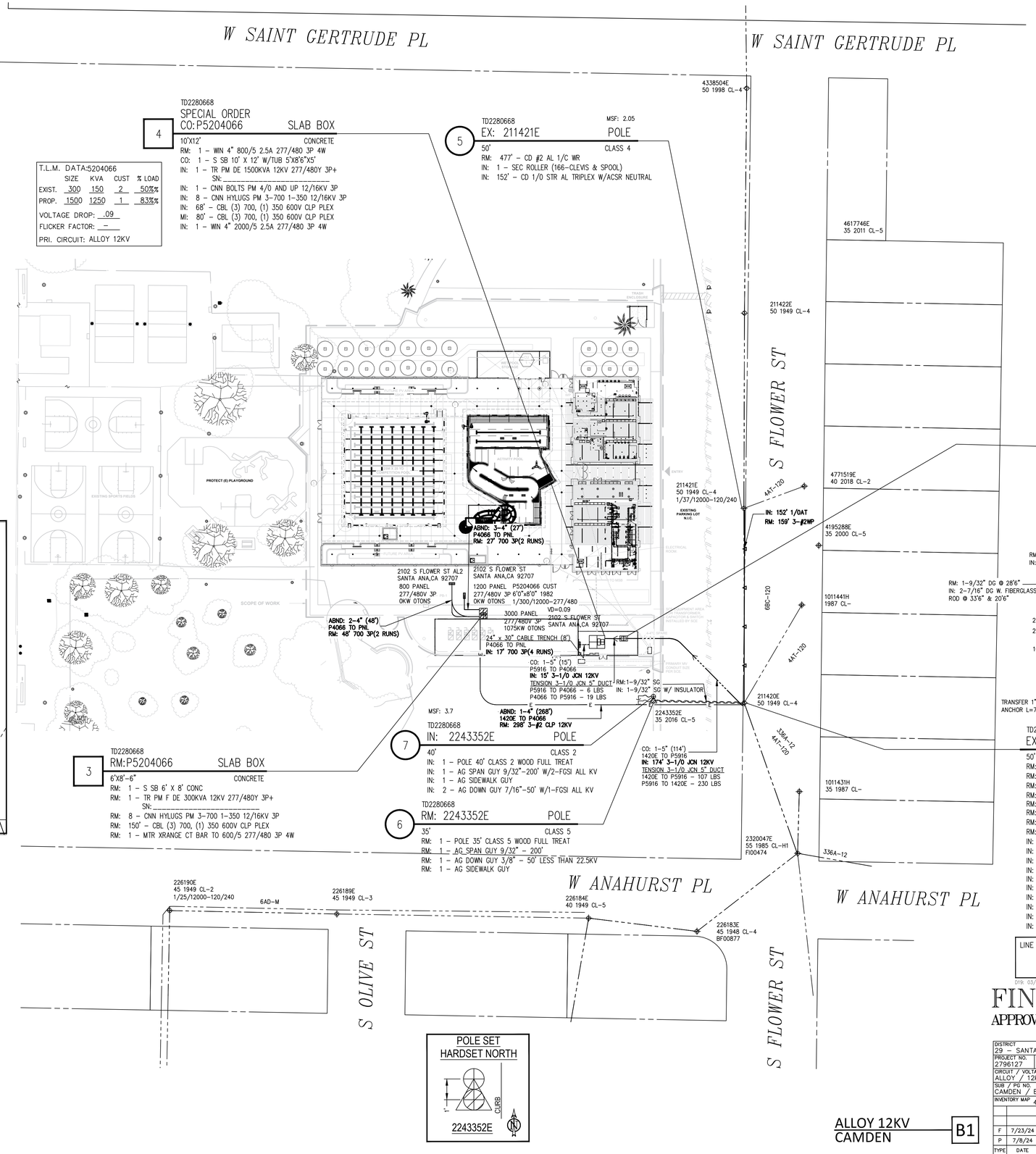
1:20 TIE DOWN DETAIL

PROJECT REQUIREMENTS (Y/N)

EDISON EASEMENT REQUIRED	N
PWRD 88 REQUIRED UG	N
CIVIL ONLY WORK ORDER	N
PERMIT REQUIRED	N
PERMIT TYPE: N/A	
OUTAGE REQUIRED	Y
OUTAGE DATE: _____ TIME: _____	
TRAFFIC CONTROL REQUIRED	N
PED. TRAFFIC CONTROL REQ'D	Y
CONVEYANCE LETTER REQ'D	N
ENVIRONMENTAL REQUIREMENTS DOCUMENT (ERD) REQUIRED	N
CSD 140 (TLM) REQ'D	Y
CIRCUIT MAP CHANGE REQ'D (TD 203)	Y
DIG ALERT APP	Y
VERIFIED ACTIVE AND CONFIRMED USA TICKETS	☐
UTILIQUEST NOTIFIED	☐
FAA MARKING REQ'D	N
FAA TYPE: N/A	
STANDARD ADHERENCE: 3_0/_2024_Y	

01Z4: 02/23/24

FILE NAME:1744802_0.01.DWG SAVE DATE: 8/2/2024 5:55 PM SAVED BY:SELJAJI



4 — TD2280668
SPECIAL ORDER
CO:P5204066 SLAB BOX
10'X12' CONCRETE
RM: 1 – WIN 4" 800/5 2.5A 277/480 3P 4W
CO: 1 – S SB 10' X 12' W/TUB 5'X8'6"X5'
IN: 1 – TR PM DE 1500KVA 12KV 277/480Y 3P+
SN: _____
IN: 1 – CNN BOLTS PM 4/0 AND UP 12/16KV 3P
IN: 8 – CNN HYLUGS PM 3–700 1–350 12/16KV 3P
IN: 68' – CBL (3) 700, (1) 350 600V CLP PLEX
MI: 80' – CBL (3) 700, (1) 350 600V CLP PLEX
IN: 1 – WIN 4" 2000/5 2.5A 277/480 3P 4W

T.L.M. DATA:5204066

	SIZE	KVA	CUST	% LOAD
EXIST.	300	150	2	50%%
PROP.	1500	1250	1	83%%

VOLTAGE DROP: .09
FLICKER FACTOR: –
PRI. CIRCUIT: ALLOY 12KV

5 — TD2280668 MSF: 2.05
EX: 211421E POLE
50' CLASS 4
RM: 477' – CD #2 AL 1/C WR
IN: 1 – SEC ROLLER (166–CLEVIS & SPOOL)
IN: 152' – CD 1/0 STR AL TRIPLEX W/ACSR NEUTRAL

3 — TD2280668
RM:P5204066 SLAB BOX
6'X8'–6" CONCRETE
RM: 1 – S SB 6' X 8' CONC
RM: 1 – TR PM F DE 300KVA 12KV 277/480Y 3P+
SN: _____
RM: 8 – CNN HYLUGS PM 3–700 1–350 12/16KV 3P
RM: 150' – CBL (3) 700, (1) 350 600V CLP PLEX
RM: 1 – MTR XRANGE CT BAR TO 600/5 277/480 3P 4W

7 — TD2280668 MSF: 3.7
IN: 2243352E POLE
40' CLASS 2
IN: 1 – POLE 40' CLASS 2 WOOD FULL TREAT
IN: 1 – AG SPAN GUY 9/32"–200' W/2–FGSI ALL KV
IN: 1 – AG SIDEWALK GUY
IN: 2 – AG DOWN GUY 7/16"–50' W/1–FGSI ALL KV

6 — TD2280668
RM: 2243352E POLE
35' CLASS 5
RM: 1 – POLE 35' CLASS 5 WOOD FULL TREAT
RM: 1 – AG SPAN GUY 9/32" – 200'
RM: 1 – AG DOWN GUY 3/8" – 50' LESS THAN 22.5KV
RM: 1 – AG SIDEWALK GUY

1 — TD2280668
CO:P5805916 SLAB BOX
4'X6' CONCRETE
CO: 1 – S SB 4'X6' W/2'–6"X4' BOX FOR PMH–5
IN: 1 – SW PM FSE CAB PMESML5 DF 600A 15KV 3P
LINE DEVICE ID: _____
IN: 3 – JJ LBE 1/0 200A 12KV
IN: 3 – JJ DB EXT 1/0 600A W/LBE 1/0 200A 15KV
IN: 6 – FE FUSE SMU20 17KV 125E (TO BE UPDATED WITH FUSE SIZE GIVEN FROM ENGINEERING)
IN: 189' – CBL 1/0 AL 3–1/C 17KV CLP PJ
MI: 30' – CBL 1/0 AL 3–1/C 17KV CLP PJ

LINE DEVICE ID# PME 0154
TO BE PROVIDED BY DISTRICT AT THE TIME OF INSTALL
DT9: 03/22/24

2 — TD2280668 MSF: 3.14
EX: 211420E POLE
50' CLASS 4
RM: 1 – XA TRPL VB 10' STEEL PIN D/A BRKT
RM: 1 – XA DBLE FB 10' WOOD PINS
RM: 1 – PH CS BKT W/LA 12KV 3P 3–#2
RM: 298' – RM CBL #2 AL 3–1/C 17KV CLP
RM: 3 – INS NEUT GLASS & PIN 12KV TIE TOP 336A
RM: 6 – INS POLY DE 12KV HOT SHOE 336 ACSR
RM: 3 – SEC ROLLER (166–CLEVIS & SPOOL)
RM: 1 – RSR PVC/STRAP 4" UNISTRUT APP
IN: 1 – FE CO OPN W/10' HD TN CM XA 100A 12KV 3P
IN: 3 – FE FUSE SMU20 17KV 125E (TO BE UPDATED FROM FUSE SIZE FROM ENGINEERING)
IN: 1 – PH CS 12KV 3P 3–1/0
IN: 1 – SA POLY W/GND & T–GAP NO PRI–N 12KV 3P
IN: 1 – MISC RAPTOR GUARD TWO–PIECE
IN: 3 – INS POLY DE 12KV HOT SHOE 336 ACSR
IN: 3 – INS POLY 12(15)KV STDOFF/DE ARM 4/0–336
IN: 3 – INS POLY DE 12KV HOT SHOE 4/0 STR
IN: 1 – SEC ROLLER (166–CLEVIS & SPOOL)
IN: 1 – RSR PVC/STRAP 4" UNISTRUT APP

LINE DEVICE ID# FD 00673
TO BE PROVIDED BY DISTRICT AT THE TIME OF INSTALL
DT9: 03/22/24

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

FINAL DESIGN
APPROVED FOR CONSTRUCTION

SCALE: 1 IN = 40 FT

DISTRICT: 29 – SANTA ANA	PROJ. MGR. DE LA O, JACOBO PHONE 626–201–0649	PLANNER DE LA O, JACOBO PHONE	DESIGNER DE LA O, JACOBO
PROJECT NO. 2796127	SERVICE REQUEST 3679501	MSR NO.	PRODUCT–1 2280668–METER & SERVICE CHANGE	ASSOC DESGN
CIRCUIT / VOLTAGE ALLOY / 12KV		GPS	PRODUCT–2	ASSOC DESGN
SUB / PG NO. CAMDEN / B1		CIRCUIT CODE 00331	PRODUCT–3	ASSOC DESGN
INVENTORY MAP 41–14C–6	J.P.A. NO.		PROPOSED CONSTRUCTION (LOCATION): PANEL UPGRADE TO 3000AMPS 2102 S FLOWER ST SANTA ANA CA 92707	
F 7/23/24 DH / SH	JD	JD	32262	
P 7/8/24 DH / SH	JD	JD	32262	
TYPE DATE APPROVED BY	CHECKED BY	DRAWN BY	PAX #	
Southern California Edison Company			SHEET 1 OF 3	DESIGN\DRWG NO. 1744802_0.01

ALLOY 12KV
CAMDEN
B1

CONSTRUCTION NOTES:

UNLESS OTHERWISE SPECIFIED ON THE WORKING DRAWING WHICH FORMS A PART OF THE SPECIFICATION, THE CONTRACTOR/DEVELOPER SHALL FURNISH THE FOLLOWING ITEMS AT NO COST TO THE EDISON COMPANY.

SOUTHERN CALIFORNIA EDISON COMPANY HAS ATTEMPTED TO CORRECTLY SHOW ALL EXISTING UTILITIES AND SUBSTRUCTURES IN THE VICINITY OF THE WORK, BUT DOES NOT GUARANTEE THERE ARE NO OTHER SUBSTRUCTURES IN THE AREA. FAILURE OF SCE TO SHOW ALL SUBSTRUCTURES IN THEIR CORRECT LOCATION WILL NOT BE A BASIS FOR A CLAIM FOR EXTRA WORK, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO SUBSTRUCTURES WHETHER SHOWN OR NOT.

1. FOR GENERAL SPECIFICATIONS SEE UGS GI 001.

2. CONDUIT:
   a. MINIMUM COVER IN STREET OR PARKWAY IS 30" BELOW GUTTER GRADE, UNLESS NOTED OTHERWISE.
   b. MINIMUM COVER ON PRIVATE PROPERTY IS 30" BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE.
   c. CONTRACTOR IS TO FURNISH AND INSTALL APPROVED CONDUIT TO EDISON SPECIFICATIONS PER UGS CD 100.1, 110 AND 120.
   d. FOR THE TYPE OF CONDUIT FOR THIS JOB, SEE UGS CD 110.1.
   e. INSTALL ALL RISERS PER UGS CD 160, 161, 162 AND 170.
   f. CAP ALL MAINLINE CONDUITS PER UGS CD 148 AND SERVICE CONDUITS PER UGS CD 150.
   g. INSTALL BLANK CONDUIT PLUGS IN ALL CONDUITS TERMINATING INTO VAULTS, MANHOLE'S, PMH'S, SOE'S & ALL CAP LOCATIONS, PER UGS CD 180.1 & UGS CD 180.2.
   h. INSTALL PULL ROPE IN ALL CONDUIT RUNS. PULL ROPE TO BE AT LEAST 3/8" POLYPROPYLENE ROPE, BRAIDED OR TWISTED. FOR SPECIFICATIONS, APPROVED MAKES, AND SUPPLIERS, SEE UGS G 040.
   i. ALL CONDUIT MUST BE MANDRELLED WITH THE APPROVED MANDREL UGS CD 197.

3. CONDUIT RADIUS REQUIREMENTS:
   a. THE MINIMUM RADIUS FOR BENDS ARE:
      36" FOR CONDUITS 3" IN DIAMETER OR SMALLER
      48" FOR CONDUITS 4" AND 5" IN DIAMETER
      60" FOR 6" DIAMETER CONDUIT
   b. THE MINIMUM RADIUS FOR ALL SWEEPS OF ALL MAINLINE CONDUITS IS 12'-6" (UNLESS NOTED OTHERWISE).

4. EXCAVATION AND BACKFILL:
   a. WORK AREA SHALL BE CLEARED AND ROUGH GRADED TO WITHIN FOUR INCHES OF FINAL GRADE PRIOR TO INSTALLATION OF EDISON CONDUIT OR STRUCTURES.
   b. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH THE CALIFORNIA STATE CONSTRUCTION SAFETY ORDERS (WHEN APPLICABLE), EDISON SPECIFICATIONS AND ALL GOVERNING LOCAL ORDINANCES.
   c. EACH TRENCH TO BE A UNIFORM DEPTH BELOW FINAL GRADE PRIOR TO INSTALLATION OF EDISON CONDUIT OR STRUCTURES.
   d. BACKFILL SHALL BE PROVIDED BY THE CONTRACTOR FOR ALL EXCAVATIONS AND SHALL INCLUDE CRUSHED ROCK, CONCRETE, AND/OR IMPORTED BACKFILL, WHEN REQUIRED.
   e. BACKFILL WITH A MINIMUM OF ONE SACK PER YARD SAND CEMENT SLURRY AROUND AND OVER VAULTS AND MANHOLES PER UGS GI 030, SECTION 4.4, AND AROUND PMH'S WITHIN ONE FOOT OF FINISHED GRADE, PER UGS SS 590.1.
   f. BACKFILL PER EDISON SPECIFICATIONS, SHALL IMMEDIATELY FOLLOW CONDUIT OR SUBSTRUCTURE INSTALLATION. AT NO TIME SHALL CONDUIT BE LEFT EXPOSED OVER 24 HOURS.
   g. NO ROCKS ARE ALLOWED WITHIN 12 INCHES OF DIRECT-BURIED CABLES OR ANY CONDUIT WITHOUT CONCRETE ENCASEMENT. NATIVE BACKFILL CAPABLE OF PASSING THROUGH A ONE-HALF INCH MESH SCREEN SHALL BE CONSIDERED TO BE "ROCK FREE". IF EXISTING BACKFILL DOES NOT PASS THROUGH A 1/2" SCREEN, PLACE IMPORTED SAND 3" BELOW AND 12" ABOVE EDISON CABLES. AFTER THIS POINT, NO ROCKS LARGER THAN 12" DIAMETER ARE PERMITTED.
   h. ALL BACKFILL SHALL BE COMPACTED TO MEET OR EXCEED LOCAL ORDINANCES OR OTHER REQUIREMENTS. IT SHALL BE PLACED IN A MANNER THAT WILL NOT DAMAGE THE CONDUIT OR SUBSTRUCTURE OR ALLOW FUTURE SUBSIDENCE OF THE TRENCH OR STRUCTURE.

5. PAVING:
   REPAVING, WHERE REQUIRED, SHALL BE PLACED IN SUCH A MANNER THAT INTERFERENCE WITH TRAFFIC, INCLUDING PEDESTRIAN TRAFFIC, WILL BE KEPT TO A MINIMUM. THE CONTRACTOR SHALL ESTABLISH A PROGRAM OF REPAVING ACCEPTABLE TO THE MUNICIPALITY, COUNTY, OR OTHER AUTHORITY HAVING JURISDICTION AND WHICH IS ACCEPTABLE TO EDISON.

6. STRUCTURES:
   a. ALL SUBSTRUCTURES SHALL BE CONSTRUCTED OR INSTALLED TO EDISON SPECIFICATIONS.
   b. INSTALL PROTECTION BARRIERS PER UGS MS 830 WHEN REQUIRED IN AREAS EXPOSED TO TRAFFIC, PER EDISON INSPECTOR.
   c. ALL CONDUIT LINES AND CONCRETE FLOORED SUBSTRUCTURES SHALL BE WATER TIGHT.
   d. ALL GROUNDING MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

7. RETAINING WALLS:
   WHEN REQUIRED, RETAINING WALLS SHALL BE PROVIDED BY THE DEVELOPER. WALLS ARE REQUIRED WHEREVER GRADE RISES MORE THAN 18 INCHES ABOVE THE STRUCTURE OR 24" ABOVE THE PAD SURFACE AT A DISTANCE OF 5 FEET FROM THE SAME, OR IN AREAS SUBJECT TO EROSION. DESIGN AND INSTALLATION MUST COMPLY WITH LOCAL BUILDING ORDINANCES. REFER TO EDISON INSPECTOR FOR TYPICAL SPACE REQUIREMENTS.

8. PERMITS:
   ALL PERMITS NECESSARY FOR EXCAVATION SHALL BE PROVIDED BY THE CONTRACTOR/DEVELOPER.

9. ACCESS:
   HEAVY TRUCK ACCESS SHALL BE MAINTAINED TO EQUIPMENT LOCATIONS. STRUCTURES MUST BE CLEAR OF ALL APPURTENANCES THAT WOULD OBSTRUCT THE LOADING OR UNLOADING OF EQUIPMENT.

10. SERVICES:
    a. METERS AND SERVICES SHALL COMPLY WITH EDISON ELECTRICAL SERVICES REQUIREMENTS.
    b. WIRING MUST BE IN ACCORDANCE WITH APPLICABLE LOCAL ORDINANCES AND APPROVED BY LOCAL INSPECTION AUTHORITIES.

11. LOCATION:
    a. THE LOCATION OF EXCAVATIONS AND STRUCTURES FOR EDISON SHALL BE AS SHOWN ON THE WORKING DRAWING. NO DEVIATION FROM THE PLANNED LOCATIONS WILL BE PERMITTED UNLESS APPROVED BY THE EDISON INSPECTOR. SEE UGS GI 001, SECTION 2.2.
    b. ACTUAL LOCATION OF OBSTRUCTIONS, STORM DRAINS, AND/OR OTHER FOREIGN UTILITIES TO BE THE RESPONSIBILITY OF THE CONTRACTOR. SEE UGS GI 001, SECTION 2.3.

12. CONTRACTOR IS TO VERIFY LOCATION AND WIDTHS OF ALL SIDEWALKS AND DRIVEWAYS PRIOR TO STREET LIGHT INSTALLATION.
    SEE UGS CD 175.1, UGS CD 175.2 AND UGS CD 175.3.

13. SURVEY:
    SURVEYING OF STREET IMPROVEMENTS, PROPERTY CORNERS, LOT LINES, FINISHED GRADE, ETC., NECESSARY FOR THE INSTALLATION OF UNDERGROUND FACILITIES MUST BE COMPLETED AND MARKERS OR STAKES PLACED PRIOR TO THE START OF THE INSTALLATION. IN ADDITION, DEVELOPER SHALL MAINTAIN THE MARKERS DURING THE INSTALLATION AND INSPECTION BY EDISON. GRADE AND PROPERTY LINE STAKES MUST SHOW ANY OFFSET MEASUREMENTS.

14. COORDINATION AND SUPERVISION:
    THE DEVELOPER SHALL PROVIDE SUPERVISION OVER AND COORDINATION AMONG THE VARIOUS CONTRACTORS WORKING WITHIN THE DEVELOPMENT IN ORDER TO PREVENT DAMAGE TO EDISON FACILITIES. HE IS RESPONSIBLE FOR THE COST OF REPAIRS, REPLACEMENT, RELOCATION, OR OTHER CORRECTIONS TO EDISON FACILITIES MADE NECESSARY BY HIS FAILURE TO PROVIDE SUPERVISION OR TO OTHERWISE COMPLY WITH THESE SPECIFICATIONS.

15. TELEPHONE AND OTHER UTILITY REQUIREMENTS:
    THE DRAWING PREPARED FOR THIS JOB MAY ALSO COVER THE FACILITIES TO BE INSTALLED FOR THE TELEPHONE COMPANY AND/OR OTHER UTILITY. ANY QUESTIONS CONCERNING DETAILS OF THEIR INSTALLATION SHOULD BE REFERRED TO THE COMPANY CONCERNED.

16. OWNERSHIP:
    DEVELOPER IS TO DEED TO THE EDISON COMPANY ALL STRUCTURES SHOWN HEREON EXCEPT THOSE SHOWN AS CUSTOMER OWNED.

17. WARRANTY:
    APPLICANTS EXPRESSLY REPRESENT AND WARRANT THAT ALL WORK PERFORMED AND ALL MATERIAL USED IN MEETING APPLICANTS' OBLIGATIONS HEREIN ARE FREE FROM DEFECTS IN WORKMANSHIP AND ARE IN CONFORMITY WITH SOUTHERN CALIFORNIA EDISON COMPANY'S REQUIREMENTS. THIS WARRANTY SHALL COMMENCE UPON RECEIPT BY APPLICANTS OF COMPANY'S FINAL ACCEPTANCE AND SHALL EXPIRE ONE YEAR FROM THAT DATE. APPLICANTS AGREE TO PROMPTLY CORRECT TO THE COMPANY'S SATISFACTION AND THAT OF ANY GOVERNMENTAL AGENCY HAVING JURISDICTION AND AT APPLICANT'S EXPENSE ANY BREACH OF THIS WARRANTY WHICH MAY BECOME APPARENT THROUGH INSPECTION OR OPERATION OF UNDERGROUND ELECTRIC SYSTEM BY COMPANY DURING THIS WARRANTY PERIOD.

18. INSPECTION:
    INSPECTION IS REQUIRED DURING THE CONSTRUCTION PERIOD. A 48 HOUR ADVANCE NOTICE OF INTENT TO START CONSTRUCTION IS REQUIRED FROM THE CONTRACTOR TO THE SOUTHERN CALIFORNIA EDISON COMPANY. STANDARDS OF EDISON CONSTRUCTION REQUIREMENTS ARE AVAILABLE UPON REQUEST.

DUCT AND STRUCTURE INSPECTOR: PHONE:

CABLING CONSTRUCTION COORDINATOR: PHONE:

D05: 03/22/24

NOTE:
ALL ELECTRICAL DUCTS AND STRUCTURES WILL CONFORM TO GENERAL ORDER #128 (RULES FOR CONSTRUCTION OF UNDERGROUND ELECTRICAL SUPPLY AND COMMUNICATION PRESCRIBED BY THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA, JANUARY 2006).

D06: 03/22/24

WARNING

THE EXCAVATOR MUST TAKE ALL STEPS NECESSARY TO AVOID CONTACT WITH UNDERGROUND FACILITIES WHICH MAY RESULT IN INJURY TO PERSONS OR DAMAGE TO FACILITIES IN THE AREA. THE INDICATED LOCATIONS OF EDISON UNDERGROUND FACILITIES, AS PROVIDED, ARE BELIEVED TO BE ACCURATE, HOWEVER, THE FINAL DETERMINATION OF EXACT LOCATIONS AND THE COST OF REPAIR TO DAMAGED FACILITIES IS THE RESPONSIBILITY OF THE EXCAVATOR.

D13: 03/22/24

CUSTOMER-OWNED CONDUIT MATERIAL* AND CONCRETE ENCASEMENT ARE TO BE INSTALLED IN ACCORDANCE WITH EDISON ELECTRICAL SERVICE REQUIREMENTS.

*SUBJECT TO APPROVAL BY LOCAL INSPECTION AUTHORITIES

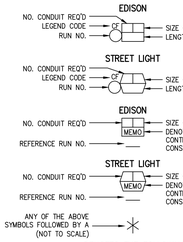
D14: 03/22/24

UNDERGROUND SERVICE ALERT
Contact USA
Dial 811 or 800-422-4133
www.digalert.org/contact

FOR UNDERGROUND LOCATING TWO WORKING DAYS BEFORE YOU DIG

D16: 03/22/24

LEGEND OF CONDUIT SYMBOLS
(CONVENTIONAL U.G.)



DENOTES THE FOLLOWING:

DB CONDUIT WITHOUT ENCASEMENT IS ACCEPTABLE FOR PORTIONS OF TRENCH WITH ONLY ONE OR TWO CONDUITS.

SEMI-ENCASEMENT IS REQUIRED FOR PORTIONS OF TRENCH WITH ONLY THREE OR FOUR CONDUITS

FULL ENCASEMENT IS REQUIRED FOR PORTIONS OF THE TRENCH WITH MORE THAN FOUR CONDUITS.

D18: 03/22/24

LEGEND CODE DEFINITIONS

CI – CUSTOMER/CONTRACTOR INSTALLED: MATERIALS FURNISHED AND INSTALLED BY APPLICANT AT EDISON'S EXPENSE AND ARE DEEDED TO EDISON. (EXCEPTION: STREET LIGHT ELECTROLIERS WILL BE INSTALLED BY EDISON'S CONTRACTOR.)

CO – CUSTOMER OWNED: MATERIALS FURNISHED, INSTALLED, OWNED, AND MAINTAINED BY APPLICANT.

CF – CUSTOMER FURNISHED: MATERIALS FURNISHED AND INSTALLED BY APPLICANT IF APPLICANT'S EXPENSE THAT ARE DEEDED TO EDISON.

IN – INSTALL: MATERIALS FURNISHED AND INSTALLED BY APPLICANT IF APPLICANT INSTALLED PROJECT OR BY EDISON IF EDISON INSTALLED PROJECT. (EXCEPTION: FOR AN APPLICANT INSTALLED LINE EXTENSION.
STATION NOS. _____
HAVING AN ASTERISK ADJACENT TO AN "IN" LEGEND CODE REPRESENTS MATERIALS TO BE PROVIDED BY APPLICANT AND INSTALLED BY EDISON IN ALL CASES. REFER TO DPB 8258. PROJECT MATERIAL LIST BY ASSEMBLY WITHIN A STATION.)

RM – REMOVE: MATERIALS REMOVED BY EDISON.

MI – MEMO INSTALLED: SAME AS IN/INSTALL.

MR – MEMO REMOVED: MATERIALS REMOVED BY EDISON.

SI – SHOO-FLY INSTALLED: MATERIALS FURNISHED AND INSTALLED BY EDISON FOR TEMPORARY CONSTRUCTION.

SR – SHOO-FLY REMOVED: MATERIALS REMOVED BY EDISON FOR TEMPORARY CONSTRUCTION.

TR – TRANSFER: EDISON LABOR REQUIRED TO TRANSFER EXISTING FACILITIES.

D31: 03/22/24

LEGEND OF DRAFTING SYMBOLS
NOT TO SCALE

TRENCH
EDISON CONDUIT (DIST. & SL)
CUST. OWNED CONDUIT
RESIDENTIAL SERVICE CABLE
EXISTING CONDUIT

STRUCTURES
VAULT
MANHOLE
PME 3–5
PME 6–12
PULL BOX
HANDHOLE
SOE
PAD
4'x4' BURD SWITCH ENCLOSURE
36" BURD SWITCH ENCLOSURE
BURD TRANSFORMER ENCLOSURE
STREET LIGHT ELECTROLIER
C/I METER PANEL
FIRE HYDRANT

D128: 03/22/24

RUN NUMBER CALL-OUTS AS FOLLOWS:

(1) – (199) MAINLINE CONDUIT
(200) – (599) SERVICE CONDUIT
(600) – (799) STREET LIGHT CONDUIT

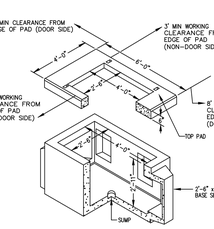
D84: 03/22/24

CONDUIT RADIUS REQUIREMENTS:

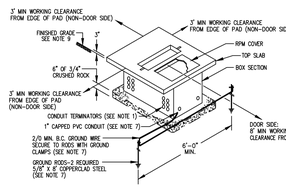
A: THE MINIMUM RADIUS FOR BENDS ARE:
36" FOR CONDUITS 3" IN DIAMETER OR SMALLER
48" FOR CONDUITS 4" AND 5" IN DIAMETER
60" FOR 6" DIAMETER CONDUIT
B: THE MINIMUM RADIUS FOR SWEEPS ARE:
36" FOR CONDUITS 3" IN DIAMETER OR SMALLER
12'-6" FOR CONDUITS 4" IN DIAMETER AND LARGER, UNLESS OTHERWISE NOTED.

D85: 03/22/24

4' X 6' PAD WITH 2'–6" X 4' BOX FOR PME–3, PME–4, & PME–5 SWITCHES
SEE UGS SS 591



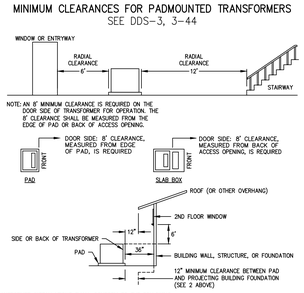
10'x12' PRECAST SLAB–BOX FOR 3ø PAD–MOUNTED TRANSFORMERS UP TO 5,000 KVA
SEE UGS SS 535



NOTES:
1. CONDUIT TERMINATORS TO BE LOCATED AS SHOWN ON UGS SS 535–2 (SHEET 2) TO UGS SS 535–5 (SHEET 5). STANDARD CONDUIT ENTRANCE SHALL BE A FLATBALL DESIGN. SLIGHT VARIATIONS BY MANUFACTURERS MAY BE ALLOWED WITH COMPANY APPROVAL.
2. WHEN CABLE TRENCH OPENINGS ARE REQUIRED IN A SLAB BOX, THEY CAN BE SPECIAL ORDERED FROM THE CONCRETE PRECASTER.
3. FOR SLAB BOX STRUCTURAL DESIGN CRITERIA, SEE UGS SS 535–2 (SHEET 2) TO UGS SS 535–5 (SHEET 5).
4. FOR LIST OF MATERIAL REQUIREMENTS AND NOTES, SEE TABLE UGS SS 535–1 (SHEET 6).
5. CONSULT MANUFACTURERS' INSTALLATION GUIDES FOR EXCAVATION DIMENSIONS.
6. AN EIGHT-FOOT MINIMUM CLEARANCE IS REQUIRED ON DOOR SIDE OF TRANSFORMER FOR OPERATION.
7. GROUND RODS, CLAMPS, AND WIRE WILL BE FURNISHED BY CONTRACTOR. SEE UGS AC 703 FOR APPROVED GROUNDING MATERIALS. GROUND WIRE TO BE A MINIMUM OF 2/0 BARE COPPER. GROUND WIRE TO BE PLACED THROUGH CAPPED ONE–INCH PVC CONDUIT AT EITHER END OF SLAB BOX. A MINIMUM THREE–FOOT LENGTH OF GROUND WIRE SHALL BE PLACED IN SLAB BOX.
8. MASTIC SEALANT IS REQUIRED AT JOINTS.
9. TOP SURFACE OF SLAB BOX SHALL BE SET THREE INCHES ABOVE FINISHED GRADE.
10. SEE UGS SS 500 FOR APPROVED MANUFACTURERS.

D56 REV. 10/26/20

MINIMUM CLEARANCES FOR PADMOUNTED TRANSFORMERS
SEE DDS–3, 3–44



PAD–MOUNTED TRANSFORMER INSTALLATIONS SHALL CONFORM TO THE FOLLOWING:
1. PAD–MOUNTED TRANSFORMERS SHALL NOT BE LOCATED DIRECTLY IN FRONT OF ENTRYWAYS, STAIRWAYS, BENEATH WINDOWS THAT CAN BE OPENED, OR WHERE THEY WILL OBSTRUCT THE VISION OF VEHICULAR TRAFFIC.
2. PAD–MOUNTED TRANSFORMERS SHALL BE LOCATED AT LEAST THE MINIMUM DISTANCE, AS IDENTIFIED IN THE FIGURE ABOVE, AWAY FROM BUILDINGS OR OTHER STRUCTURES TO ENSURE ADEQUATE SPACE FOR OPERATING, TO MINIMIZE VIBRATION HUMS, AND TO MEET FIRE SAFETY REQUIREMENTS.
3. WHENEVER POSSIBLE, PLACE PAD–MOUNTED STRUCTURES AND EQUIPMENT AWAY FROM AREAS WITH FREQUENT IRRIGATION TO HELP PREVENT FUTURE CORROSION.
   INSTALL NEW STAINLESS STEEL PAD–MOUNTED EQUIPMENT ONLY IF EVERY EFFORT HAS BEEN MADE TO LOCATE THE PAD MOUNT AWAY FROM HIGH–CORROSION AREAS AND THE PAD MOUNT IS EXPECTED TO BE EXPOSED FOR LESS THAN 10 YEARS DUE TO CORROSION. CONTACT PE FOR APPROVAL.
   EXISTING MILD STEEL PAD–MOUNTED EQUIPMENT MAY BE UPGRADED TO STAINLESS STEEL IF THE EXISTING EQUIPMENT HAS FAILED DUE TO CORROSION WITHIN 15 YEARS OF INSTALLATION. CONTACT PE FOR APPROVAL.
   * NOTE: ALL PAD–MOUNTED TRANSFORMERS PURCHASED AFTER 2004 ARE DESIGNED WITH STAINLESS STEEL BOTTOMS.
4. A CLEAR PASSAGEWAY OF 12 FEET MINIMUM SHALL BE AVAILABLE AT ALL TIMES, IMMEDIATELY ADJACENT TO ONE SIDE OF THE TRANSFORMER TO PROVIDE AN ACCESSIBLE ROADWAY FOR TRANSFORMER MAINTENANCE. THIS PASSAGEWAY SHALL BE DESIGNED TO MEET H–20 (20–TON) CONSTRUCTION.
5. IF SCE HAS INSTALLED OR AGREES TO INSTALL, TRANSFORMERS AT LOCATIONS WHERE SCE CANNOT USE ITS STANDARD TRANSFORMER LIFTING EQUIPMENT, AND SPECIAL LIFTING FACILITIES ARE REQUIRED TO INSTALL OR REMOVE THE TRANSFORMERS ON THE CUSTOMER'S PREMISES, THE CUSTOMER SHALL, AT THEIR EXPENSE, (1) FURNISH, INSTALL, OWN, AND MAINTAIN PERMANENT LIFTING FACILITIES; AND BE RESPONSIBLE FOR LIFTING THE TRANSFORMER TO AND FROM ITS PERMANENT POSITION, OR (2) PROVIDE (OR PAY FOR) PORTABLE LIFTING FACILITIES ACCEPTABLE TO SCE FOR INSTALLING OR REMOVING THE TRANSFORMERS. RIGHTS–OF–WAY AND SPACE PROVISIONS SHALL BE PROVIDED BY APPLICANT SUCH THAT ACCESS AND REQUIRED CLEARANCES FROM ADJACENT STRUCTURES CAN BE MAINTAINED.
6. TRANSFORMER STRUCTURES WILL NORMALLY BE INSTALLED ONLY IN NONTRAFFIC AREAS. TRANSFORMER PROTECTION IS REQUIRED WHEN COMPANY EQUIPMENT IS EXPOSED TO TRAFFIC. THIS PROTECTION MAY BE IN THE FORM OF BARRIERS, BARRICADES, OR CURB. A CURB MUST HAVE A MINIMUM HEIGHT OF 8 INCHES AND BE AT LEAST 6 INCHES THICK AND ITS FRONT FACE LOCATED 60 INCHES MINIMUM FROM THE EQUIPMENT FOUNDATION.

D54: 03/22/24

TABLE SS 591–1: PRECAST CONCRETE MANUFACTURERS' REFERENCE NUMBERS

NOMINAL SIZE	JENSEN PRECAST	OLDCASTLE INFRASTRUCTURE
4' x 6' WITH 2'–6" x 4' BOX	K3048–PUV36–11	ED–264–30–PMH–5

1.0 EXCAVATION SIZE:
MINIMUM EXCAVATION FOR PULL BOX WILL BE 46" x 83" x DEPTH TO SUIT JOB. INSTALLING CONTRACTOR WILL PROVIDE GRADE RINGS (6" MINIMUM NECESSARY IN ORDER TO MAINTAIN COVER OVER CONDUITS PER SCE REQUIREMENTS OR PERMIT AGENCY/REQUIREMENTS, WHICHEVER IS GREATER. BACKFILL WILL BE WELL COMPACTED TO PREVENT SUBSIDENCE.

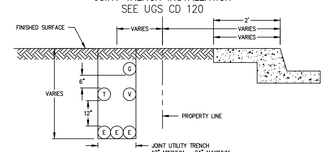
2.0 UGS REFERENCES:
AC 700 GROUND ROD – GROUND WIRES
AC 703 GROUNDING MATERIALS
MC 830 PROTECTION BARRIERS

3.0 REFERENCE DRAWING:
5227040–D: EQUIPMENT SLAB BOX 4' X 6' PAD W/2'–6" X 4' PULLBOX FOR PMH–5 SWITCHGEAR.

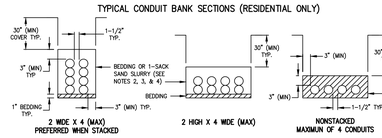
4.0 INSTALLATION NOTES:
1. PAD AND PULLBOX WILL BE SET LEVEL. PULLBOX WILL BE PLACED ON 6" (MINIMUM) COMPACTED ROCK BASE TO ENSURE UNIFORM DISTRIBUTION OF SOIL PRESSURE IN FLOOR.
2. MASTIC SEALANT IS REQUIRED AT JOINTS.
3. TOP SURFACE OF PAD WILL BE SET 3" ABOVE FINISHED GRADE.
4. ONE GROUND ROD WILL BE FURNISHED AND INSTALLED BY CONTRACTOR. INSTALL GROUND ROD THROUGH FLOOR OF BOX PER AC 700. GROUND ROD MATERIAL WILL COMPLY WITH AC 703.
5. AN 8" (MINIMUM) CLEARANCE IS REQUIRED ON DOOR SIDE OF SWITCH PAD FOR OPERATION.
6. PROTECTION BARRIERS WILL BE INSTALLED IF PAD IS EXPOSED TO VEHICULAR TRAFFIC PER MS 830.

D35 Rev. 10/26/20

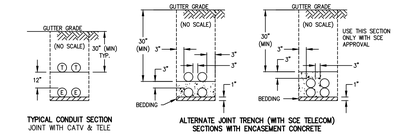
JOINT TRENCH INSTALLATION
SEE UGS CD 120



TYPICAL CONDUIT BANK SECTIONS (RESIDENTIAL ONLY)



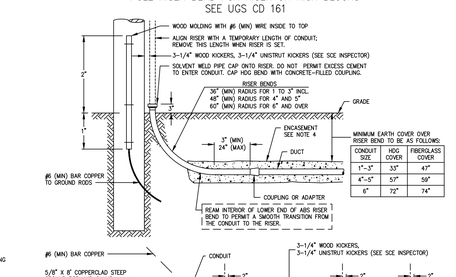
TYPICAL JOINT TRENCH SECTIONS



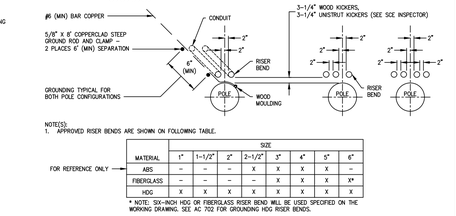
NOTES:
1. CONDUIT SECTIONS SHOULD HAVE NO MORE THAN EIGHT SCE CONDUITS, AND NO CONDUIT SHOULD BE SURROUNDED ON FOUR SIDES BY OTHER CONDUITS.
2. ANY CONDUIT SECTION WITH STACKED CONDUIT MUST BE BACKFILLED WITH BEDDING (SEE NOTE 4) OR ONE–SACK SAND SLURRY. (STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SECTION 201–1.1.2 MIX 100–E–100.)
3. TWO–SACK CONCRETE ENCASEMENT PER CD 100 WILL BE USED IN JOINT TRENCH IN ORDER TO REDUCE TELECOM CONDUIT CLEARANCES TO THREE INCHES MINIMUM PER THE ABOVE JOINT TRENCH SECTIONS. ONE–SACK SAND SLURRY IS NOT A SUBSTITUTE FOR ENCASEMENT CONCRETE.
4. BEDDING MATERIAL WILL BE CLEAN SAND OR PEA GRAVEL. NATIVE MATERIALS MEETING THE REQUIREMENTS OF CD 100 ARE ONLY PERMITTED FOR THE NONSTACKED CONFIGURATION AND ARE NOT PERMITTED TO BED PADS AND RISERS AT BOXES.
5. CONDUIT WILL BE TYPE "DB" PER CD 110 AND WILL BE OF APPROVED MANUFACTURE PER CD 115. TYPE EB IS PERMITTED WHEN ENCASEMENT CONCRETE IS USED.
6. WHERE BOTH RESIDENTIAL AND NONRESIDENTIAL CONDUIT ARE IN THE SAME TRENCH, THE REQUIREMENTS OF SCOPE CD 120.1 SHALL APPLY.
7. SCOPE CD 120.1, SHEET 1 MAY BE USED FOR RESIDENTIAL CONSTRUCTION.
8. USE TEMPORARY SUPPORTS EVERY EIGHT FEET TO MAINTAIN HORIZONTAL CONDUIT ALIGNMENT. REMOVE AFTER CONCRETE IS PLACED.

D70A:03/22/24

POLE RISER BEND FOR RISER ON KICK BLOCKS
SEE UGS CD 161



CONDUIT SIZE	HDG COVER	FIBERGLASS COVER
1"–3"	33"	47"
4"–5"	57"	58"
6"	72"	74"



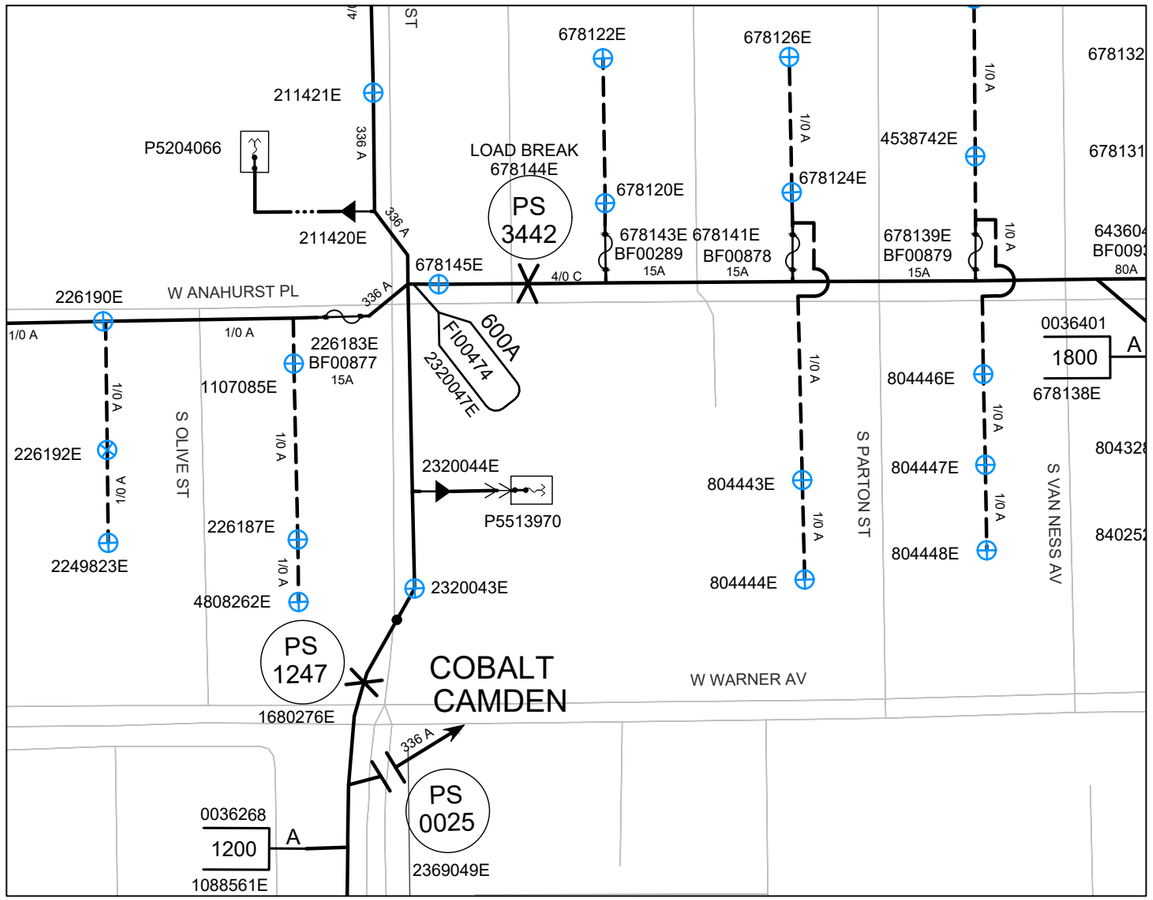
NOTES:
1. APPROVED RISER BENDS ARE SHOWN ON FOLLOWING TABLE.

		SIZE						
	MATERIAL	1"	1–1/2"	2"	2–1/2"	3"	4"	5"	6"
FOR REFERENCE ONLY	ABS	–	–	–	X	X	X	X	–
	FIBERGLASS	X	–	–	–	X	X	X	X*
	HDG	X	–	–	X	X	X	X	X

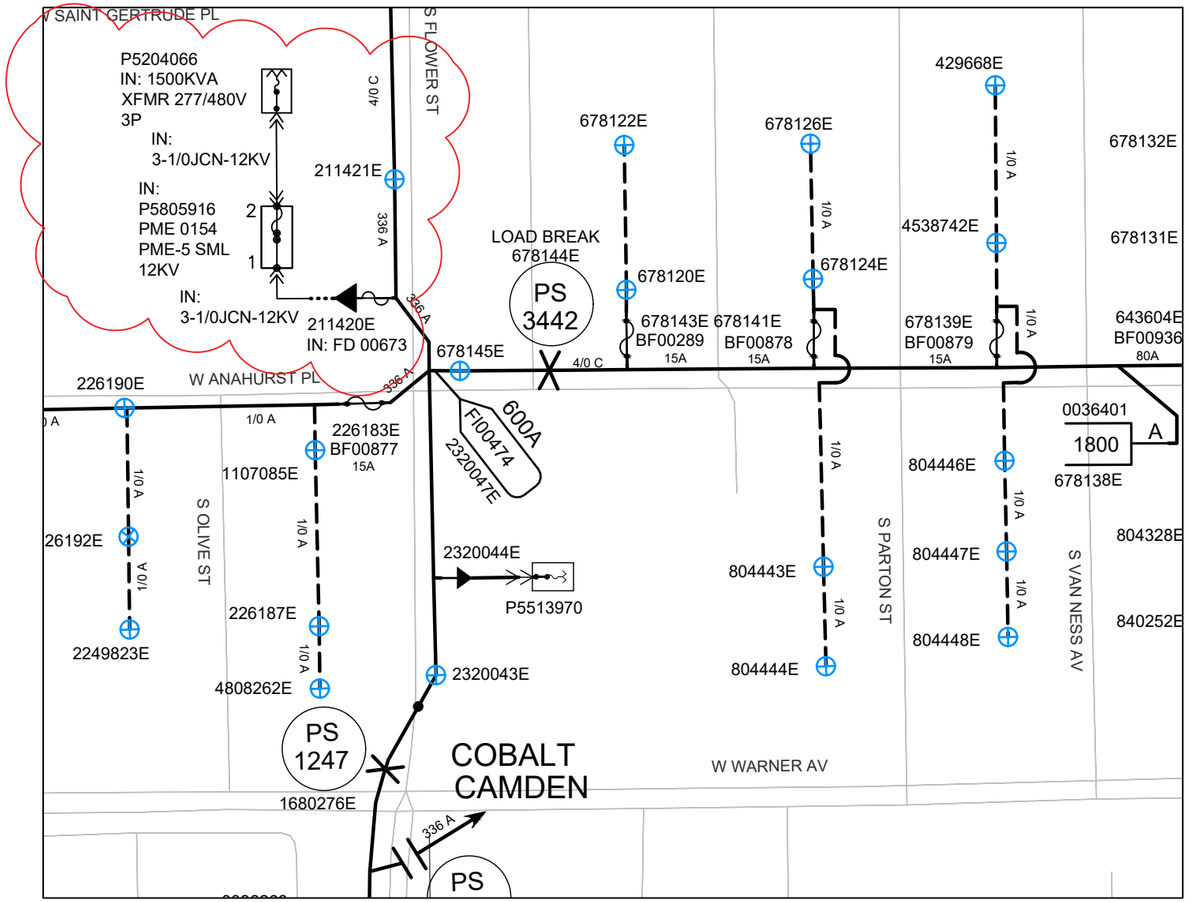
* NOTE: SEE–INCH HDG OR FIBERGLASS RISER BEND WILL BE USED SPECIFIED ON THE WORKING DRAWING. SEE AC 702 FOR GROUNDING HDG RISER BENDS

EXISTING SINGLE LINE
ALLOY 12KV % CAMDEN B1

PULLED 7/24/24



PROPOSED SINGLE LINE
ALLOY 12KV % CAMDEN B1



N

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

NOT TO SCALE

DISTRICT: 29 – SANTA ANA	PROJ. MGR. DE LA O, JACOBO PHONE 626-201-0649	PLANNER DE LA O, JACOBO PHONE	DESIGNER: DE LA O, JACOBO		
PROJECT NO.: 2796127	SERVICE REQUEST: 3679501	MSR NO.	PRODUCT-1: 2280668–METER & SERVICE CHANGE		ASSOC DESGN
CIRCUIT / VOLTAGE: ALLOY / 12KV		GPS	PRODUCT-2		ASSOC DESGN
SUB / PG NO.: CAMDEN / B1		CIRCUIT CODE: 00331	PRODUCT-3		ASSOC DESGN
INVENTORY MAP: 41–14C–6	J.P.A. NO.				
F	7/23/24	DH / SH	JD	JD	32262
P	7/8/24	DH / SH	JD	JD	32262
TYPE	DATE	APPROVED BY	CHECKED BY	DRAWN BY	PAX #

Southern California Edison Company

PROPOSED CONSTRUCTION (LOCATION)
PANEL UPGRADE TO 3000AMPS
2102 S FLOWER ST
SANTA ANA CA 92707

SHEET 3 OF 3

DESIGN\DRWG NO. 1744802_0.01

FILE NAME:1744802_0.01.DWG SAVE DATE:8/2/2024 5:50 PM SAVED BY:DELAOJ1

CITY OF SANTA ANA
APPENDIX O
PROJECT NO.: 22-1415
MEMORIAL PARK AQUATICS CENTER PROJECT

NON-MANDATORY PRE-BID JOB WALK POST MEETING DETAILS

CITY OF SANTA ANA
MEMORIAL PARK AQUATICS CENTER
PRE-BID WALK AUGUST 7th at 10:30 AM

WELCOME:

- Introductions:
  - City of Santa Ana:
    - Suzi Furjanic, Acting Park Planning Manager, Park Services
    - Victor Rosales, Asst. Park Planner, Park Services
    - Teresa Rosales, Contract Administrator, Park Services
    - Gerardo Padilla, Asst. Engineer, Construction Engineering
    - Henry Laguna, General Maintenance Supervisor, Park Services
    - Wayne Bakker, General Maintenance Leader
  - ELS:
    - Kenneth Hasegawa, Architect, Principal
  - Swinerton:
    - Scott Kube, Project Executive, Construction Management
- General:
  - Sign-in Sheet
  - Questions: All questions shall be issued in writing via PlanetBids;
    - Please, no side bar conversations.
  - Schedule: Schedule on NIB will be reviewed today; please check PlanetBids for times.
- Project Background
  - Memorial Park dedicated in 1950
  - Community Center (bathhouse) and pool construction 1956. Decommissioned in 2023 after the summer swim season
    - Deteriorated condition
    - Doesn't meet current programming
    - Pool shell leaking
  - Extensive community outreach
  - Community, City Council and City officials very engaged; this is the largest capital improvement project ever conducted in SA Park system.
  - Tight timeline to award a construction contract due to Federal American Rescue Plan Act (ARPA) funding. We are aiming to award October 15.
  - Project will awarded to the lowest bidder based on total base bid. There are four additive alternative alternatives:
    - Scoreboard & Timing System
    - Wet Storage Canopy
    - Ornamental Fencing
    - Thickened Pool Shell at competition pool
    - City has the right to award any, all or none of the alternatives

GENERAL PROJECT DESCRIPTION: ELS to note project highlights

SCHEDULE:

- **August 14, 2024:** Addendum #02: will included, but is not limited to:
    - Insurance requirements
    - SCE Final electrical plan
    - Division 1 specifications
    - Hazmat Report and required abatement, if applicable
- **August 13, 2024**: Q&A Deadline
- **August 21, 2024:** Addendum #03: will included, but is not limited to:
    - Building Department comments
    - Scope changes, if applicable, following the Q&A period.
- **August 28, 2024:** General Contractor Bids due
- **October 15, 2024:** City Council Approve Construction Contract
- **October 16, 2024 at 10 AM:** Pre-construction (kick-off) Meeting

SITE WALK:

- Today's route: we'll walk the staging area, community center interior, pool deck, pool equipment room, project limits, electrical room
- Walk the Staging area:
    - Point out that map for this is included as an appendix
- Walk within the pool fence area.
    - Pool deck
    - Pool equipment building
- Walk the interior of the community center
    - Main room, lifeguard office, men/women's changing, then onto pool deck
- Electrical room:
    - Note that we are consolidating service
    - Point to the new electrical service yard area
- Points to note along the way:
    - Project limits/construction fencing placement
    - Mural: protect and reinforce, per plans
    - Existing trees: protect in place per plans

CLOSING REMARKS:

- Has everyone signed the sign-in sheet?
- Please be sure to read thoroughly the sections pertaining to dewatering, geotechnical, and the additional references sheet.
- Again, bids are due August 28. Please refer to the Notice Inviting Bids for other pertinent dates
- Again, please direct all questions to us in writing via PlanetBids; we will respond intermittently and to all at the latest within 2 days of the Q&A deadline.
- Thank you all for coming out! We look forward to receiving your bids!

Looking South

Looking East

ADDENDUM NO. 2
PROJECT NO. 22-1415

CITY OF SANTA ANA - PUBLIC WORKS AGENCY

PRE-CONSTRUCTION MEETING
ATTENDANCE ROSTER

Project #: 22-1415
Tilte : Memorial Park Aquatics Center
Date : August 7, 2024

	NAME	ORGANIZATION / DEPARTMENT	AREA CODE AND PHONE #	E-MAIL
1	WALLY KAGAN	NEW DYNASTY CONST.	92780 949-502-6400	estimating@newx-c.com
2	Mike Fadullon	Woodcliff Corp.	90064 310.312.1400	bids@woodcliff.net
3	DAVID GIERCZYK	PERERA CONST	909 484-6350	DAVIDG@PERERAINC.COM
4	Westley Fithian	CLE Electric	310-938-1179	westley.fithian@clepower.com
5	VIJAY SHARMA	PERERA CONSTRUCTION	909-484-6350	VIJAYS@PERERAINC.COM
6	Fernando Romero	PAINTERS & ALLIED TRADES COMP.	626-592-2360	Fernando.romero@PATCAT.org
7	Christopher Reyes	ILB Electric, Inc.	951.414.7256	chris.reyes@ilbinc.com
8	Steven Camcam	ACC Contractors	626 969 9797	estimating@acccontractors.com
9	Brandee Metcalf	Ultra Systems Environmental	949-788-4900	bmetcalf@ultrasystems-ca.com
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CITY OF SANTA ANA - PUBLIC WORKS AGENCY

PRE-CONSTRUCTION MEETING
ATTENDANCE ROSTER

Project # : 22-1415
Tilte : Memorial Park Aquatics Center
Date : August 7, 2024

	NAME	ORGANIZATION / DEPARTMENT	AREA CODE AND PHONE #	E-MAIL
1	Karinna Diaz	Swinerton	949 299 4783	kdiaz@swinerton.com
2	Azadeh Sarjoughian	Swinerton	949 299 4832	azadeh.sar@swinerton.com
3	Dalina Clemente	SJ Amorosa	(714) 433-2326	dclemente@sjamorosa.com
4	SONNY CHAN	ROYAL CONSTRUCTION CORP.	(626) 358-6688	sonny.chan@royalconstructionsite.com
5	John Gallagher	PCL	(949) 547-1934	jegallagher@pcl.com
6	Abdul Saadat	AMG	(661) 251-7401	Estimating@amgassociatesinc.com
7	Joseph Horspool	Gilbert & Stearns	(949) 647-0439	joe@gilbertstearns.com
8	Hector Ojeda	De La Fuente Construction Inc.	619-609-1786	estimating@dlfci.com
9	Israel Mosqueda	IBEW Local 441	657-274-1091	Mosqueda@1bewoc.com
10	Lissette Chavez	Liz Transport LLC	951-253-6090	liztransportllc@gmail.com
11	Ahmad Siefanan	Bernards	657-500-1123	asiefanan@gmail.com
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CITY OF SANTA ANA - PUBLIC WORKS AGENCY

PRE-CONSTRUCTION MEETING
ATTENDANCE ROSTER

Project # : 22-1415
Tilte : Memorial Park Aquatics Center
Date : August 7, 2024

	NAME	ORGANIZATION / DEPARTMENT	AREA CODE AND PHONE #	E-MAIL
1	GREG TOROSYAN	THE NAZERIAN GROUP	(818) 990-5115	GREG@NAZERIAN.NET
2	ROBERT GRESL	BALFOUR BEATTY	858.228.7931	BGRESL@BALFOURBEATTYUS.COM
3	DUSAN SELEZAN	BALFOUR BEATTY	858-610-1827	DSELEZAN@BBCUS.COM
4	WAYNE ROEMHILD	" "	949-379-9688	wroemhild@BBUS.com
5	Steven Santangelo	ProWest Constructors	951-678-1038	Bid@prowestconstructors.com
6	Sean Paquet	Rain For Rent	562-675-3398	spaquet@rainforrent.com
7	Michael Shawver	Swinerton	213-820-2196	mshawver@swinerton.com
8	Steve Myers	Pinner Construction	714-490-4000	stevem@pinnerconstruction.com
9	BUEN HATANAKA	PINNER CONSTRUCTION	(714)490-4000	BUENC@PINNERCONSTRUCTION.COM
10	ERIC ARZAGA	United Rentals	714-944-8395	earzaga@ur.com
11	SAM REED	CONSTRUCTONE	714-259-5406	SAMR@CONSTRUCT1.COM
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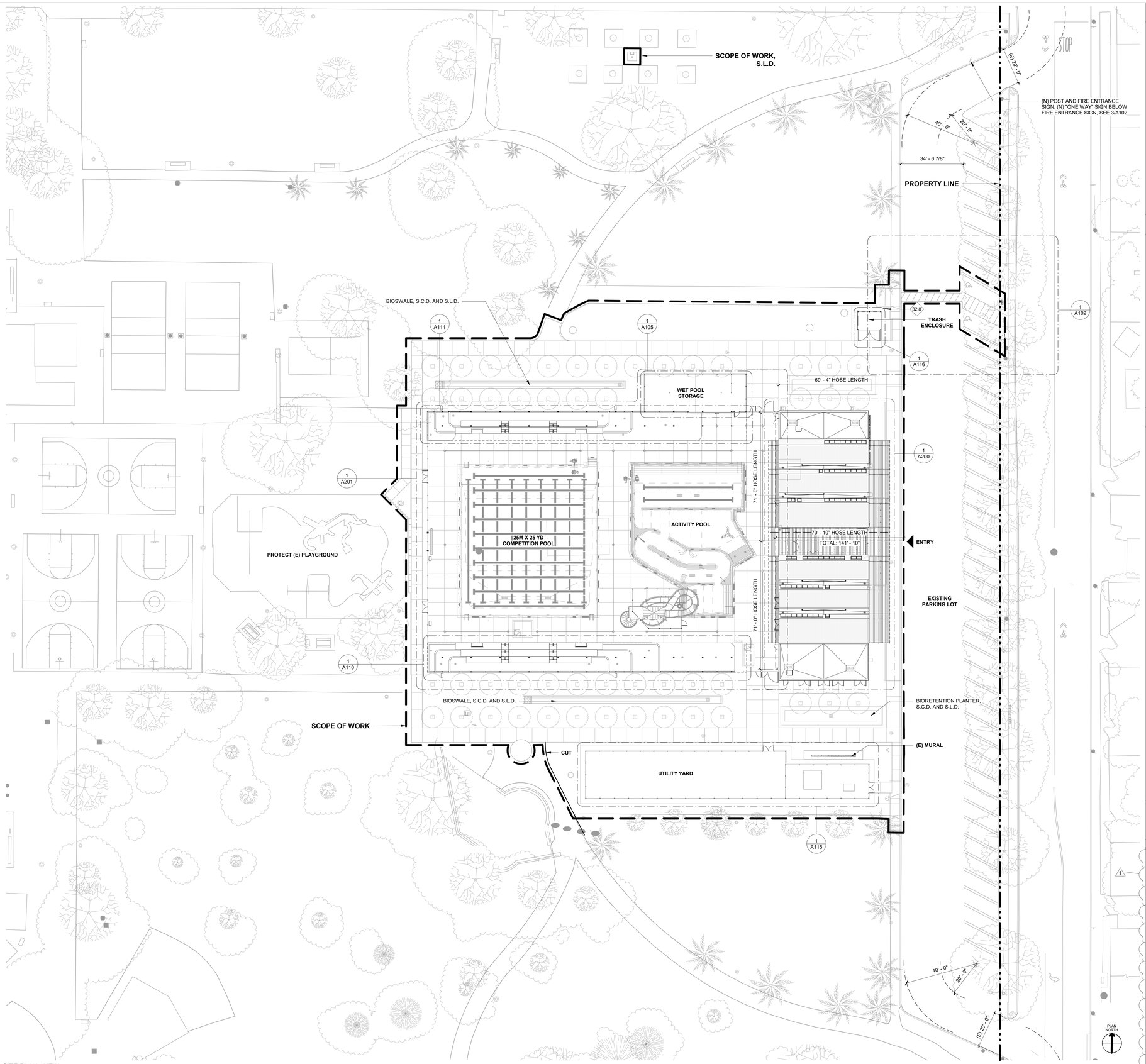
ADDENDUM NO. 2
PROJECT NO. 22-1415



1 SITE PLAN - NEW
3/64" = 1'-0"

GENERAL NOTES

1. FFE: +0' - 0" = +51.00 SEE CIVIL DRAWINGS.
2. ALL OPENINGS ARE FULL OR 1/2 BLOCK CMU MODULES U.O.N. SEE CMU PLAN FOR MORE INFO AND WALL PLACEMENT.
3. ALL EXPOSED C.I.P. CONC. & CMU BLOCK TO RECEIVE WATERPROOF & ANTI-GRAFFITI COATING. SEE SPECIFICATIONS.
4. AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT BUILDING. SPRINKLERS SHALL BE DESIGNED TO COORDINATE WITH DUCTS, PIPING, CONDUIT, LIGHTING, ACCESS PANEL LOCATIONS AND OTHER CEILING ELEMENTS FOR A CLEAN, ARCHITECTURAL APPEARANCE.
5. SLAB DIMENSIONS ARE MEASURED TO GRIDLINES. SEE SLAB PLAN.
6. ALL FLOOR DRAINS ARE TO BE CENTERED IN THEIR RESPECTIVE SPACES, U.O.N. SEE 1/A202
7. ALL EXPOSED STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL ELEMENTS TO BE PAINTED, U.O.N.
8. REFER TO SPECIFICATIONS FOR LIST OF MATERIAL FINISHES, COLORS, AND PAINT COLORS.
9. ALL APPLIANCES TO BE OWNER FURNISHED AND CONTRACTOR INSTALLED, U.O.N.

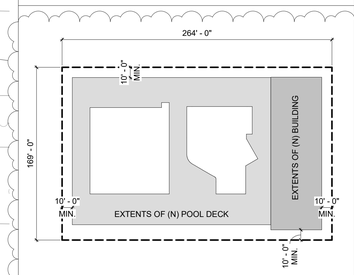
SHEET NOTES

1. SEE CIVIL AND LANDSCAPE DRAWINGS FOR MORE INFORMATION.
2. FOR EXTERIOR SITE LIGHTING, SEE ELECTRICAL DRAWINGS.
3. FOR POOL AND POOL DECK INFORMATION, SEE AQUATIC DRAWNGS.
4. REFER TO GEOTECH REPORT FOR GROUND IMPROVEMENTS.
5. SEE LANDSCAPE DRAWINGS FOR LANDSCAPE ELEMENTS AND PERIMETER HEDGE AT POOL ENCLOSURE.
6. TREE TRUNKS ADJACENT TO POOL ENCLOSURE TO BE LOCATED GREATER THAN 5 FEET FROM FENCELINE.
7. SLURRY SEAL EXISTING PARKING LOT FROM ENTRANCE GATE TO EXIT GATE (APPROXIMATELY 29,140 SQ. FT.) AND RE-STRIPE PARKING STALLS. FOR ACCESSIBLE PARKING, SEE A102. PARKING LOT WORK TO BE DONE ONCE CONTRACTOR HAS COMPLETED CONSTRUCTION OF BUILDING AND POOLS.

KEYNOTES

#	DESCRIPTION
32.8	'PARK RULES' SIGN, OFCI, ON NEW 2" GALV POST. SEE 4/A102. FINAL LOCATION TO BE COORDINATED WITH CLIENT.

GROUND IMPROVEMENT AREA DIAGRAM



NOTE:
GROUND IMPROVEMENTS ARE TO BE IMPLEMENTED AT ALL AREAS OF STRUCTURAL IMPROVEMENT. SEE GEOTECHNICAL REPORT FOR SPECIFIC EXTENTS; THE DIAGRAM ABOVE IS FOR REFERENCE ONLY.

DESIGN, ENGINEERING, AND IMPLEMENTATION OF GROUND IMPROVEMENTS TO BE PROVIDED UNDER GENERAL CONTRACTOR'S SCOPE. REFER TO GEOTECHNICAL REPORT FOR CRITERIA AND RECOMMENDATIONS.

els architecture+ urban design

PROJECT:

SANTA ANA MEMORIAL PARK AQUATICS CENTER

2102 S FLOWER ST
SANTA ANA, CA 92707

PROJECT NUMBER:
202305

CLIENT:
CITY OF SANTA ANA
20 CIVIC CENTER PLAZA, SANTA ANA, CA 92701

PROJECT TEAM:

ARCHITECT:
ELS ARCHITECTURE AND URBAN DESIGN
2040 Addison Street
Berkeley, CA 94704
P: 510.540.2929

CIVIL ENGINEER:
KPFF
700 South Flower Street, Suite 2100
Los Angeles, CA 90017
P: 213.418.0201

LANDSCAPE ARCHITECT:
SWA
570 Glenneyre Street
Laguna Beach, CA 92651
P: 949.497.5471

STRUCTURAL ENGINEER:
JOHN A. MARTIN & ASSOCIATES
950 South Grand Avenue, 4th Floor
Los Angeles, CA 90015
P: 213.483.6490

MECHANICAL & ELECTRICAL ENGINEER:
GUTTMANN & BLAEVOET
1620 Montgomery Street, Suite 230
San Francisco, CA 94111
P: 415.655.4000

AQUATICS:
AQUATIC DESIGN GROUP
2226 Faraday Avenue
Carlsbad, CA 92008
P: 760.438.8400

SPECIFICATIONS:
SPECWEST
1975 E. Buck Ridge Pl
Tucson, AZ 85737
P: 800.646.3820

REVISION

NUMBER	DATE	DESCRIPTION
1	8/14/24	ADDENDUM 2

ISSUE:
PERMIT SUBMITTAL

DATE:
JULY 29, 2024

STAMP:

LICENSED ARCHITECT
ENRIQUE D MARTIN
No. C-31982
Ren 03/31/25
STATE OF CALIFORNIA

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
A101